Hoshizaki America, Inc.

Stackable Crescent Cuber

Models
KM-1301SAH/3, SWH/3, SRH/3
KM-1400SWH-M, SWH3-M
KM-1601SAH/3, SWH/3, SRH/3
KM-1900SAH/3, SWH/3, SRH/3
KM-2100SWH3, SRH3
KM-2500SWH3, SRH3
KMH-2000SWH/3, SRH/3

SERVICE MANUAL

"A Superior Degree of Reliability"

www.hoshizaki.com

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⚠ WARNING

Only qualified service technicians should install and service the appliance. To obtain the name and phone number of your local Hoshizaki Certified Service Representative, visit www.hoshizaki.com. No service should be undertaken until the technician has thoroughly read this Service Manual. Failure to service and maintain the appliance in accordance with this manual will adversely affect safety, performance, component life, and warranty coverage and may result in costly water damage. Proper installation is the responsibility of the installer. Product failure or property damage due to improper installation is not covered under warranty.

Hoshizaki provides this manual primarily to assist qualified service technicians in the service of the appliance.

Should the reader have any questions or concerns which have not been satisfactorily addressed, please call, send an e-mail message, or write to the Hoshizaki Technical Support Department for assistance.

Phone: 1-800-233-1940; (770) 487-2331
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HOSHIZAKI AMERICA, INC.
618 Highway 74 South
Peachtree City, GA 30269
Attn: Hoshizaki Technical Support Department

Web Site: www.hoshizaki.com

NOTE: To expedite assistance, all correspondence/communication MUST include the following information:

- Model Number _____
- Serial Number _____
- Complete and detailed explanation of the problem.

IMPORTANT
This manual should be read carefully before the appliance is serviced. Read the warnings and guidelines contained in this manual carefully as they provide essential information for the continued safe use, service, and maintenance of the appliance. Retain this manual for any further reference that may be necessary.

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Important Safety Information

Throughout this manual, notices appear to bring your attention to situations which could result in death, serious injury, damage to the appliance, or damage to property.

⚠ WARNING **Indicates a hazardous situation which could result in death or serious injury.**

NOTICE **Indicates a situation which could result in damage to the appliance or property.**

IMPORTANT **Indicates important information about the use and care of the appliance.**

⚠ WARNING

The appliance should be destined only to the use for which it has been expressly conceived. Any other use should be considered improper and therefore dangerous. The manufacturer cannot be held responsible for injury or damage resulting from improper, incorrect, and unreasonable use. Failure to service and maintain the appliance in accordance with this manual will adversely affect safety, performance, component life, and warranty coverage and may result in costly water damage.

To reduce the risk of death, electric shock, serious injury, or fire, follow basic precautions including the following:

- Only qualified service technicians should install and service this appliance.
- The appliance must be installed in accordance with applicable national, state, and local codes and regulations. Failure to meet these code requirements could result in death, electric shock, serious injury, fire, or damage to the appliance.
- Electrical connection must be hard-wired and must meet national, state, and local electrical code requirements. Failure to meet these code requirements could result in death, electric shock, serious injury, fire, or damage.
- The icemaker requires an independent power supply of proper capacity. See the nameplate for electrical specifications. Failure to use an independent power supply of proper capacity can result in a tripped breaker, blown fuse, damage to existing wiring, or component failure. This could lead to heat generation or fire.
- **THE ICEMAKER MUST BE GROUNDED.** Failure to properly ground the icemaker could result in death or serious injury.
- To reduce the risk of electric shock, do not touch the control switch with damp hands.
- Move the control switch to the "OFF" position and turn off the power supply before servicing. Lockout/Tagout to prevent the power supply from being turned back on inadvertently.
- Do not make any alterations to the appliance. Alterations could result in electric shock, serious injury, fire, or damage.

⚠ WARNING, continued

- The appliance is not intended for use by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children should be properly supervised around the appliance.
- Do not climb, stand, or hang on the appliance or allow children or animals to do so. Serious injury could occur or the appliance could be damaged.
- Do not use combustible spray or place volatile or flammable substances near the appliance. They might catch fire.
- Keep the area around the appliance clean. Dirt, dust, or insects in the appliance could cause harm to individuals or damage to the appliance.

Additional Warning for Remote Models

- **THE REMOTE CONDENSER UNIT MUST BE GROUNDED.** The power supply and ground connection to the remote condenser unit are supplied from the icemaker. Failure to properly ground the remote condenser unit could result in death or serious injury.
- Wire routing (conduit) and disconnect (if required) must meet national, state, and local electrical code requirements. Failure to meet these code requirements could result in death, electric shock, serious injury, fire, or damage.
- Move the icemaker control switch to the "OFF" position and turn off the power supply to the icemaker before servicing the remote condenser unit. Lockout/Tagout to prevent the power supply from being turned back on inadvertently.

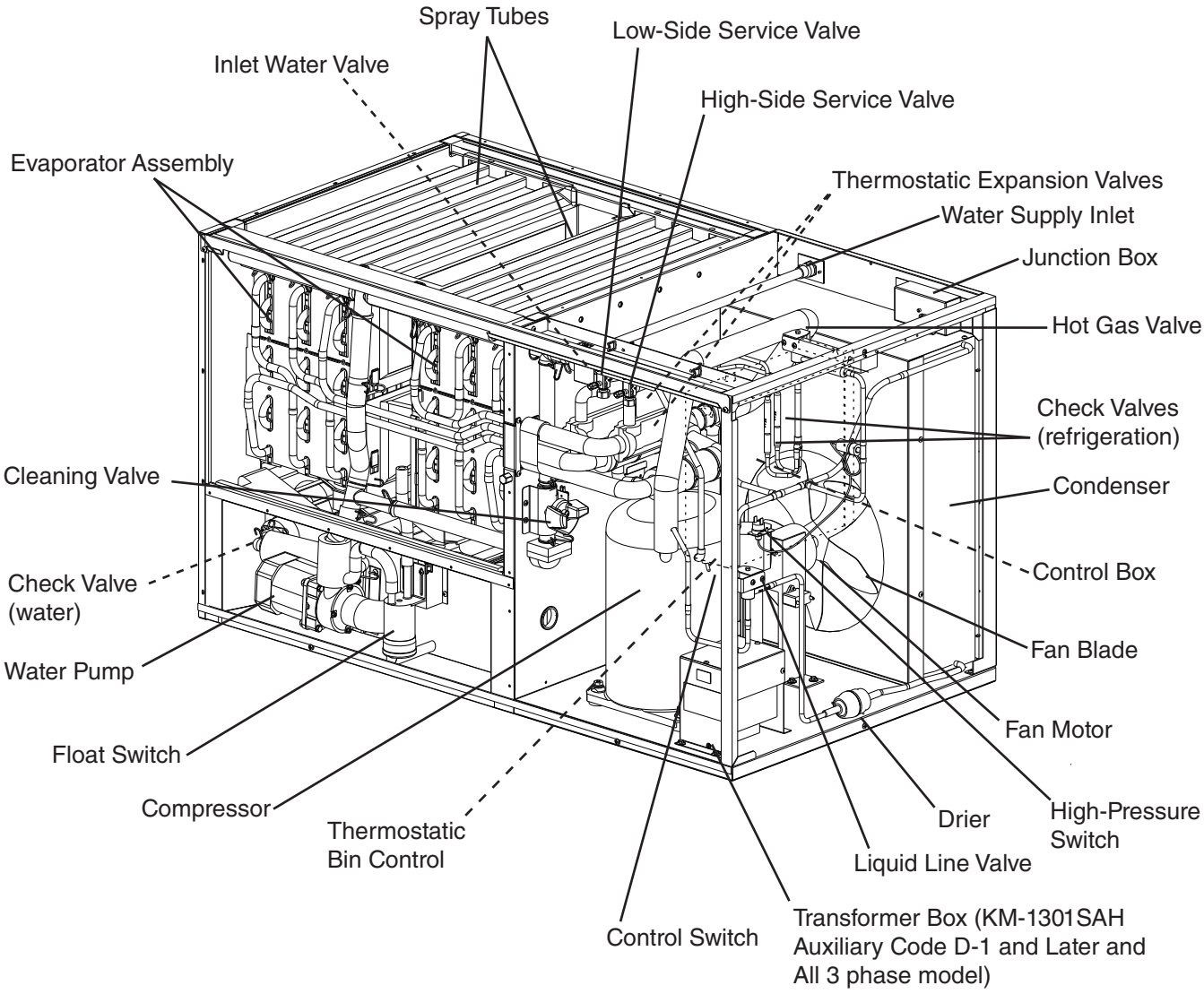
NOTICE

- Follow the instructions in this manual carefully to reduce the risk of costly water damage.
- In areas where water damage is a concern, install in a contained area with a floor drain.
- Install the appliance in a location that stays above freezing. Normal operating ambient temperature must be within 45°F to 100°F (7°C to 38°C).
- Do not leave the appliance on during extended periods of non-use, extended absences, or in sub-freezing temperatures. To properly prepare the appliance for these occasions, follow the instructions in "VI. Preparing the Icemaker for Periods of Non-Use."
- Do not place objects on top of the appliance.
- The dispenser unit/ice storage bin is for ice use only. Do not store anything else in the dispenser unit/ice storage bin.

I. Construction and Water/Refrigeration Circuit Diagram

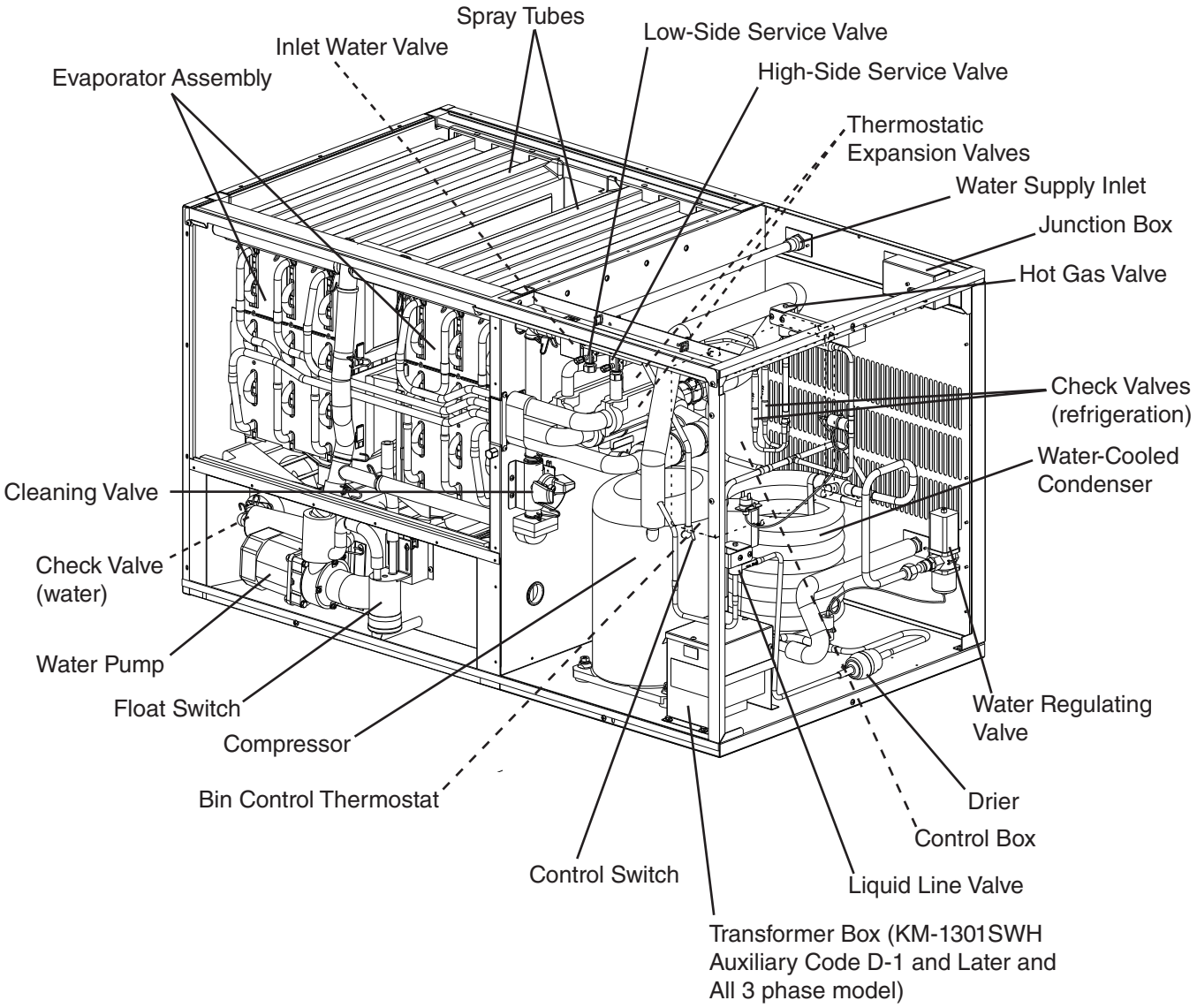
A. KM Construction

1. Air-Cooled Models (SAH/3)



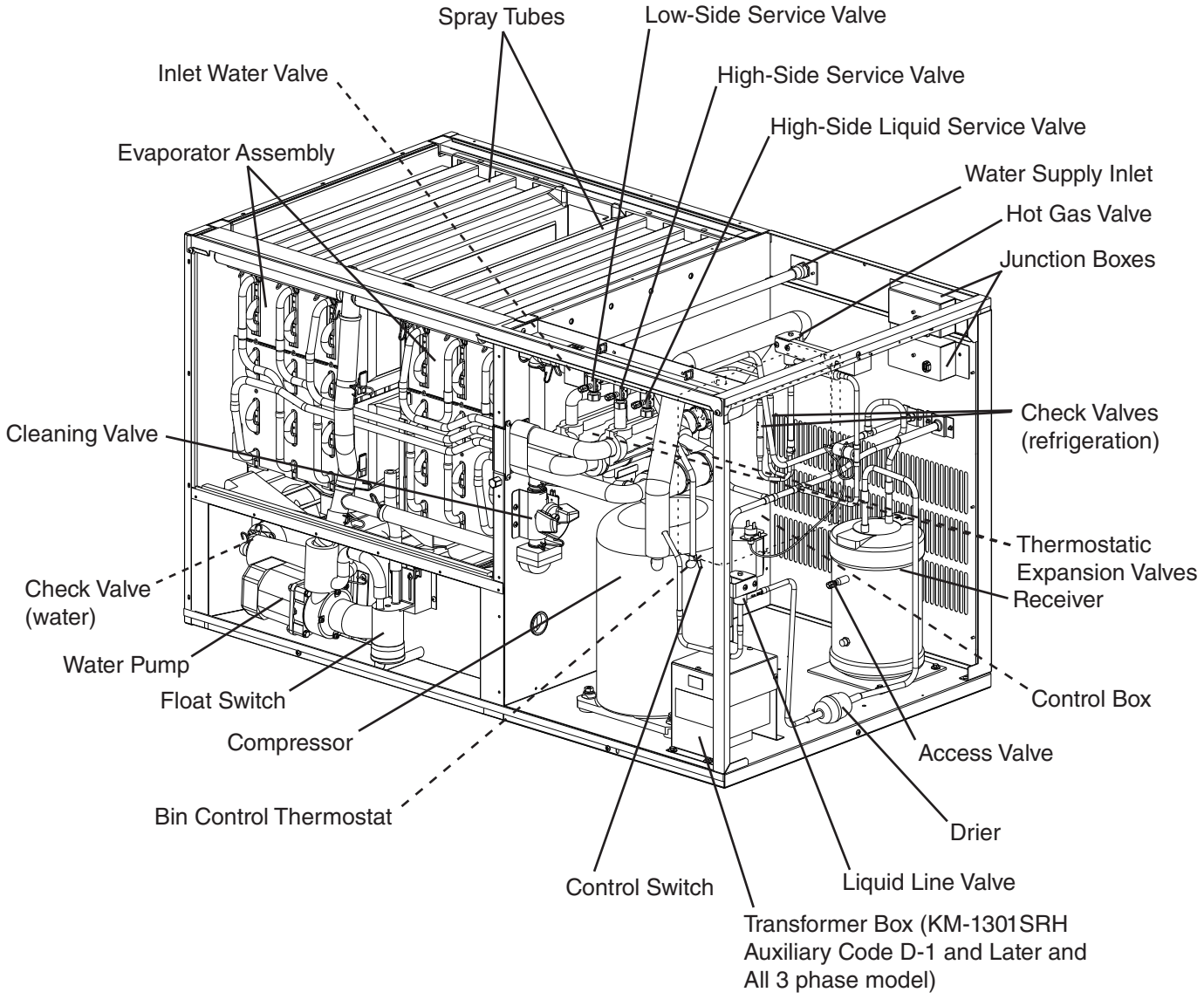
Model Shown: KM-1301SAH3

2. Water-Cooled Models (SWH/3/-M)



Model Shown: KM-1301SWH3

3. Remote Models (SRH/3)

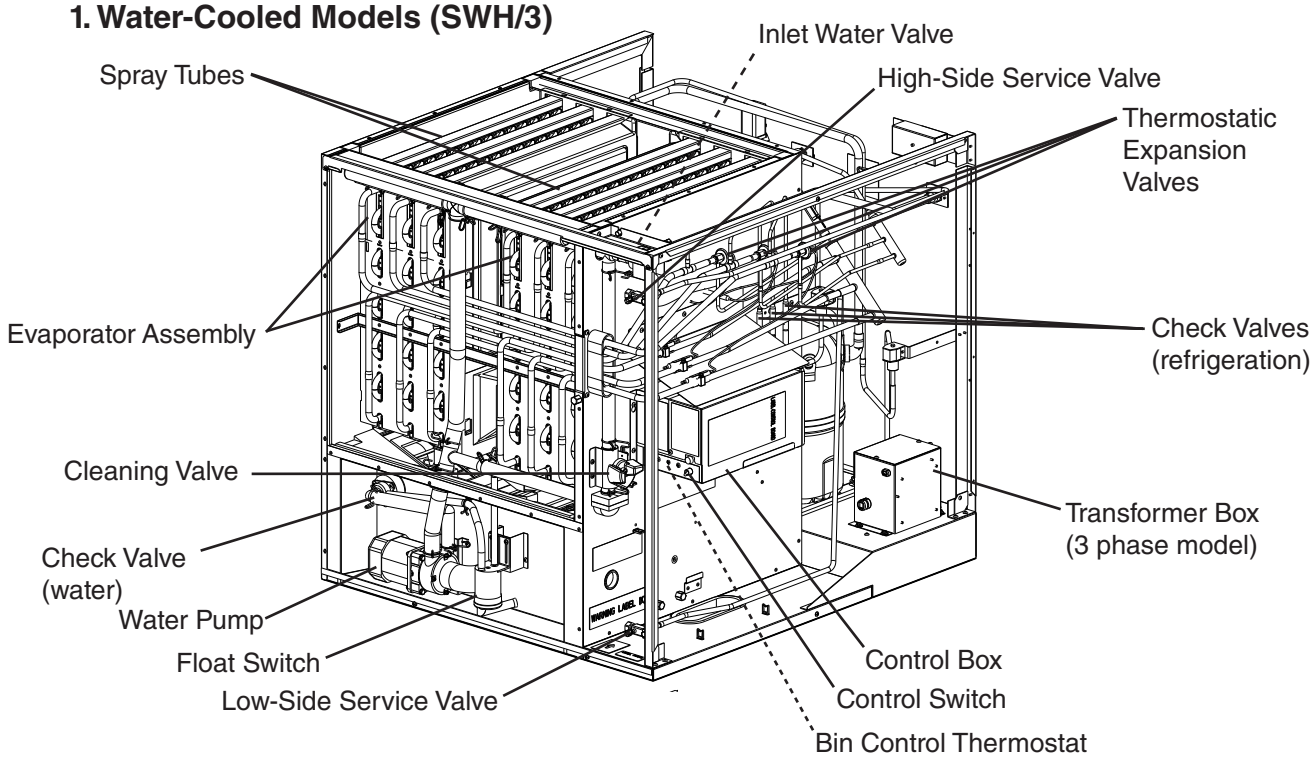


Note: KM-2500SRH3 Includes Headmaster (C.P.R.)

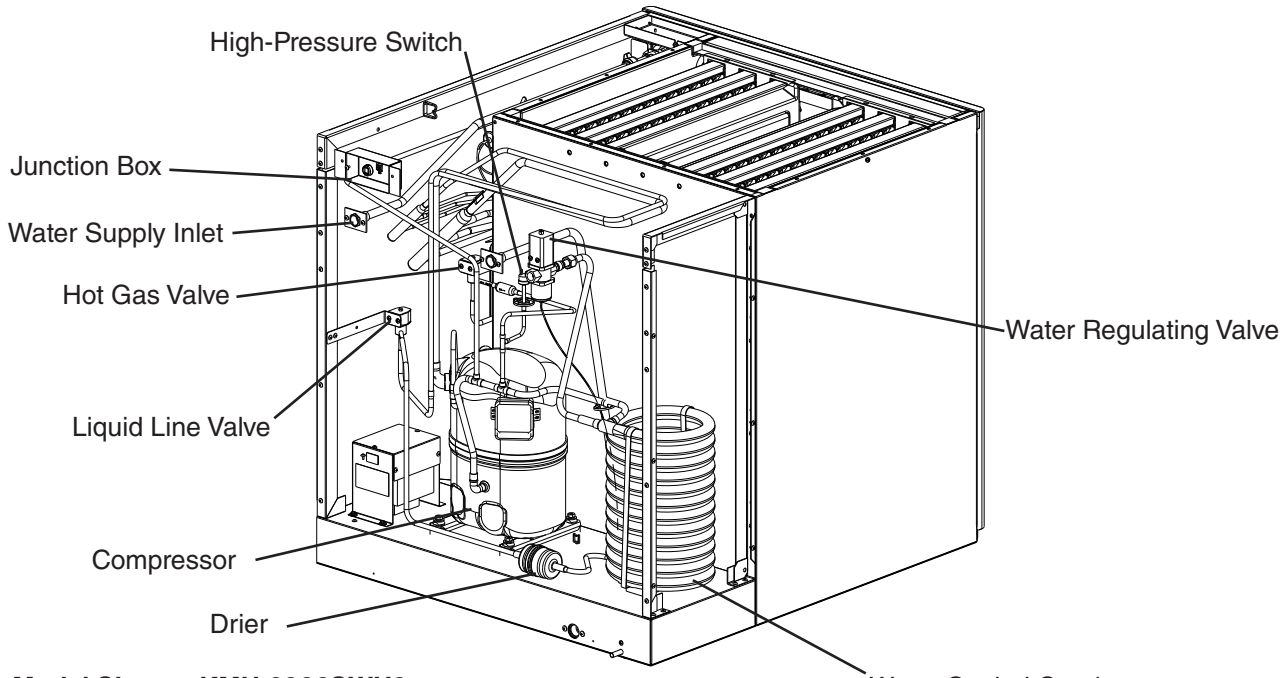
Model Shown: KM-1301SRH3

B. KMH Construction

1. Water-Cooled Models (SWH/3)

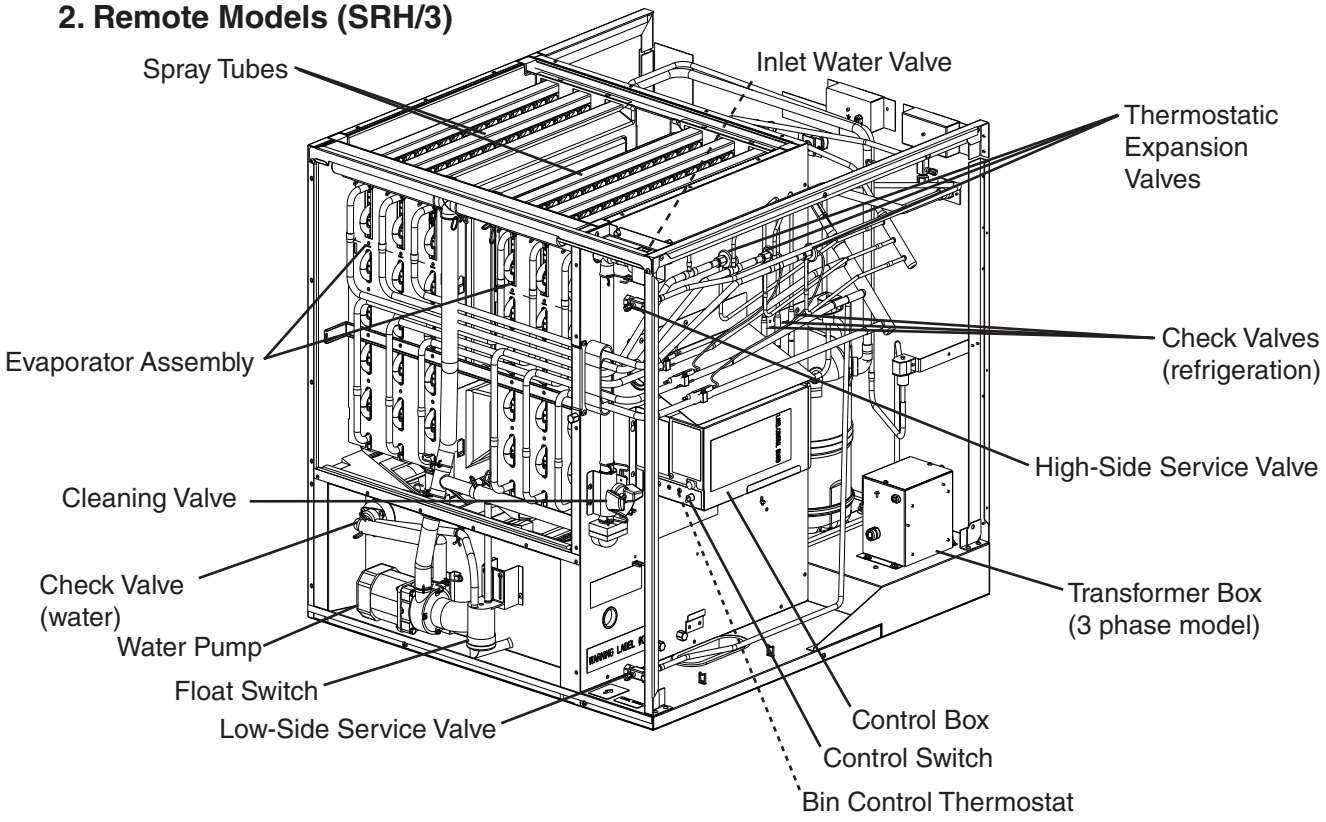


Model Shown: KMH-2000SWH3

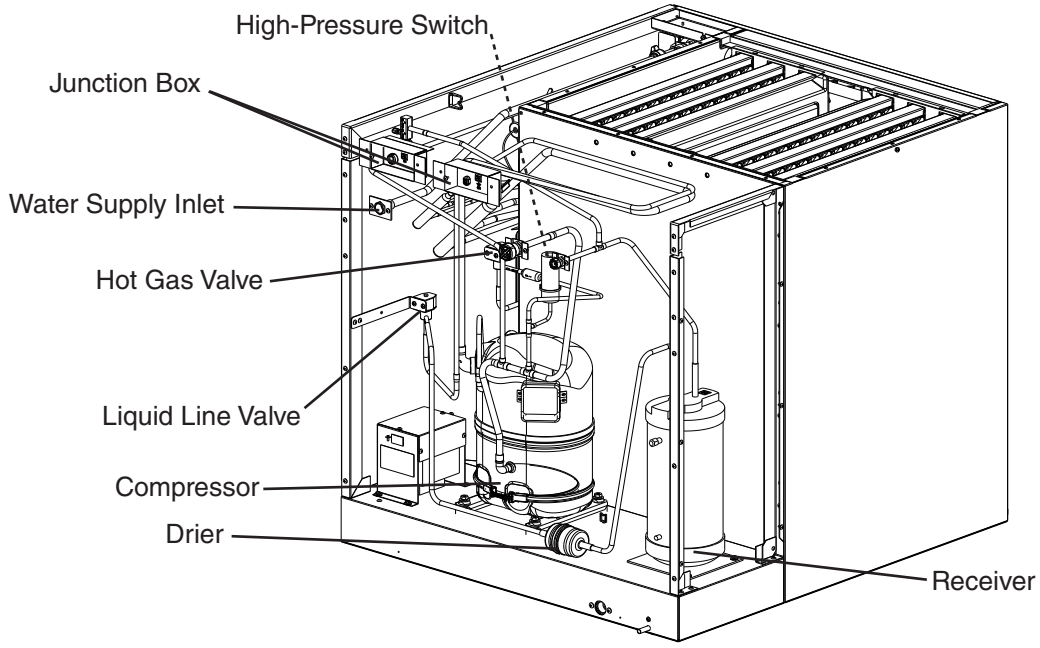


Model Shown: KMH-2000SWH3

2. Remote Models (SRH/3)



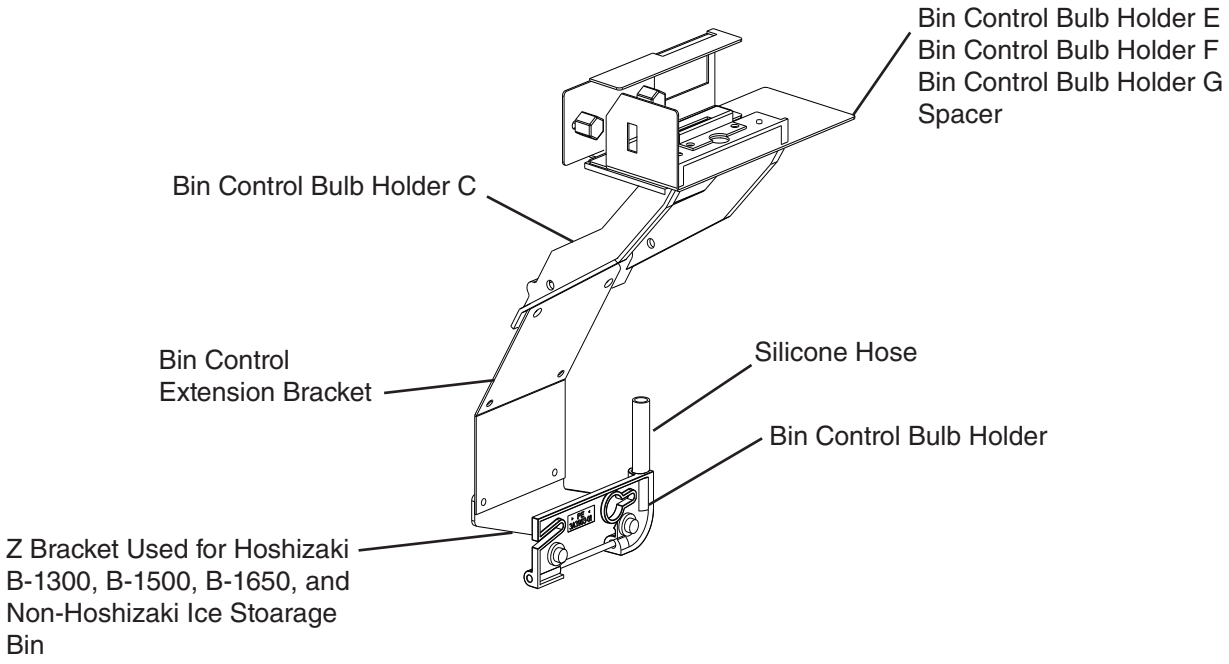
Model Shown: KMH-2000SRH3



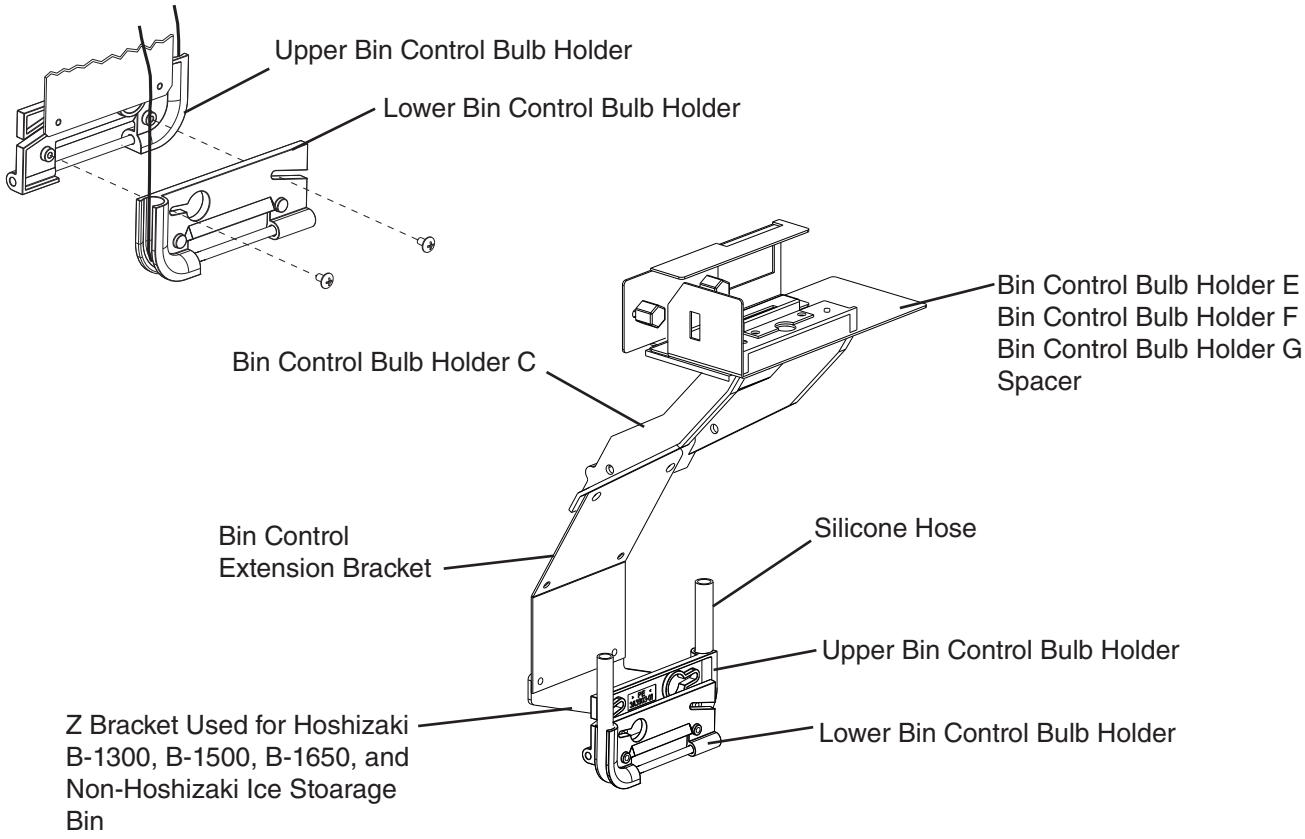
Model Shown: KMH-2000SRH3

C. Bin Control

1a. Single Thermostatic Bin Control

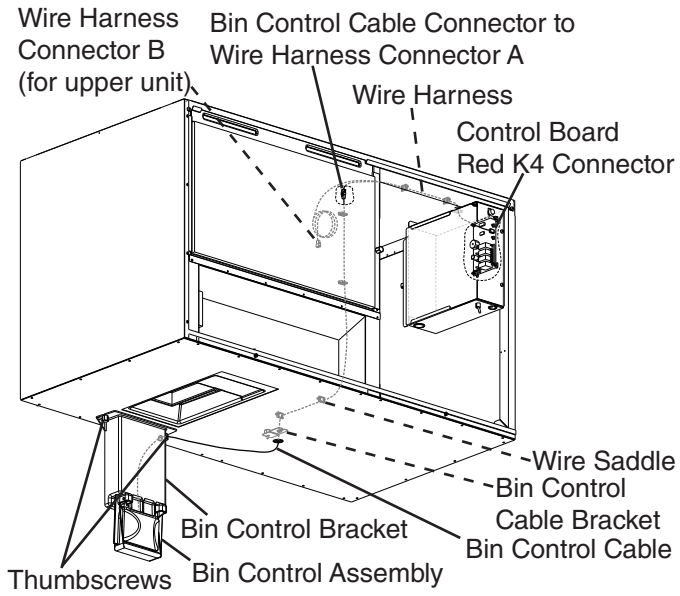


1b. Stacked Thermostatic Bin Control

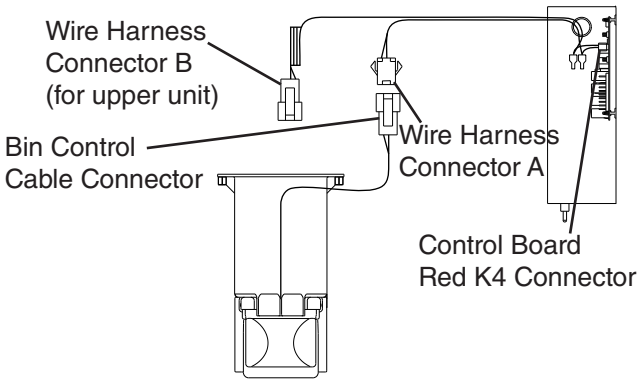


2a. Single Mechanical Bin Control

Mechanical Bin Control Connection Overview

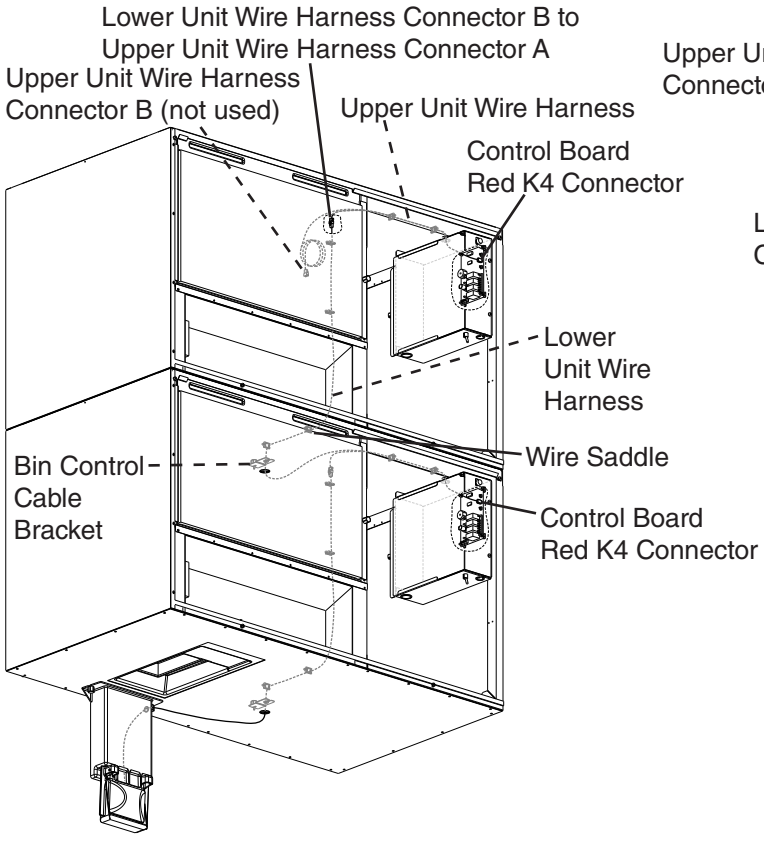


Connection Detail

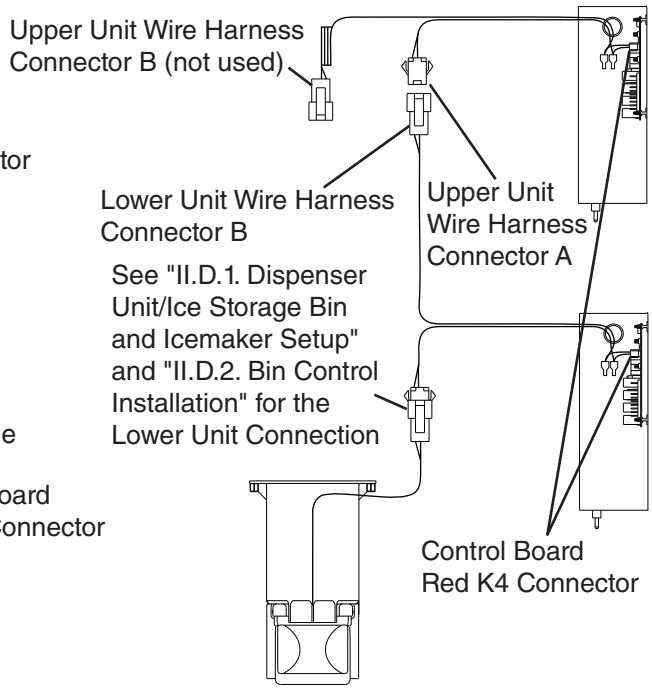


2b. Stacked Mechanical Bin Control

Upper Unit Connection Overview

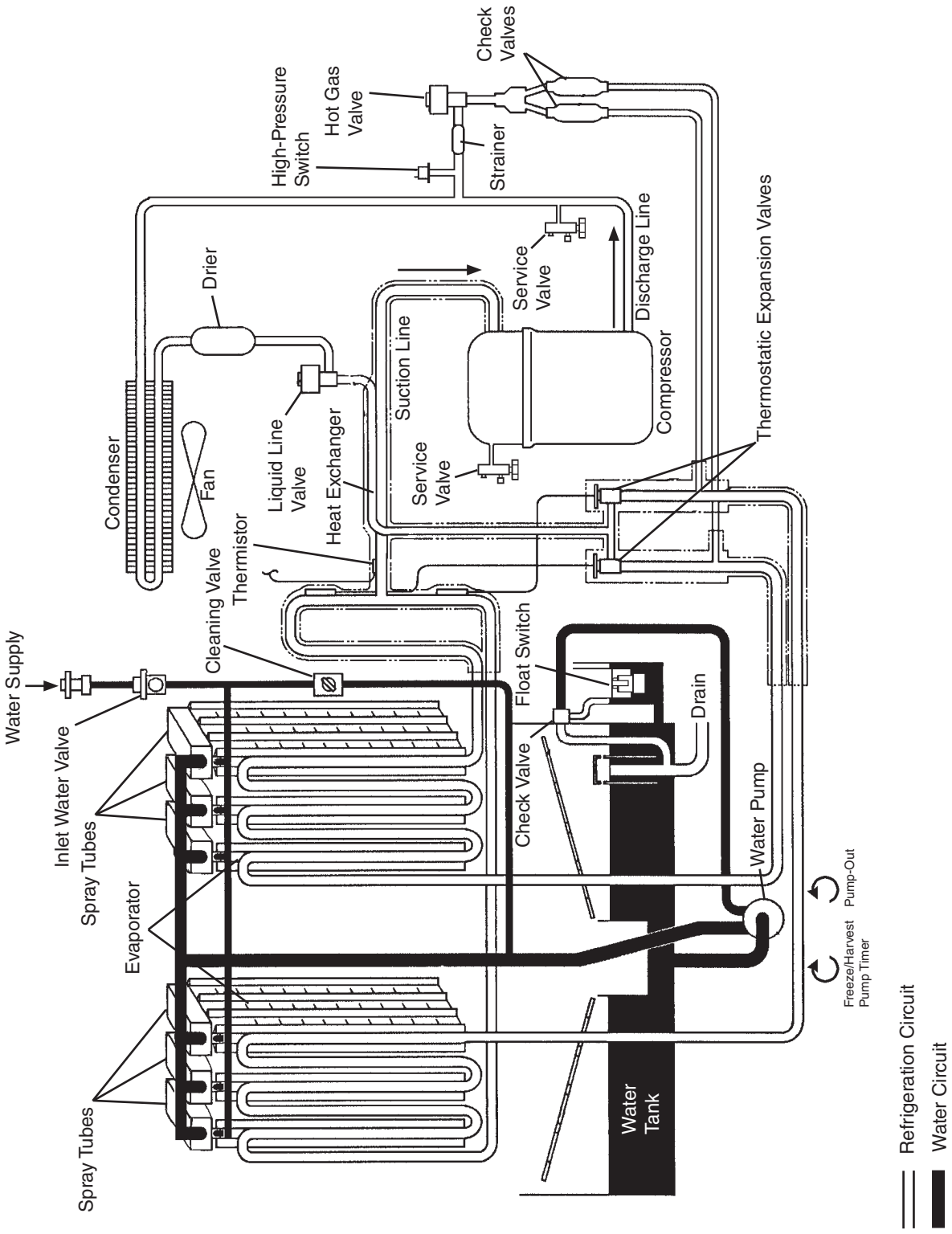


Upper Unit Connection Detail

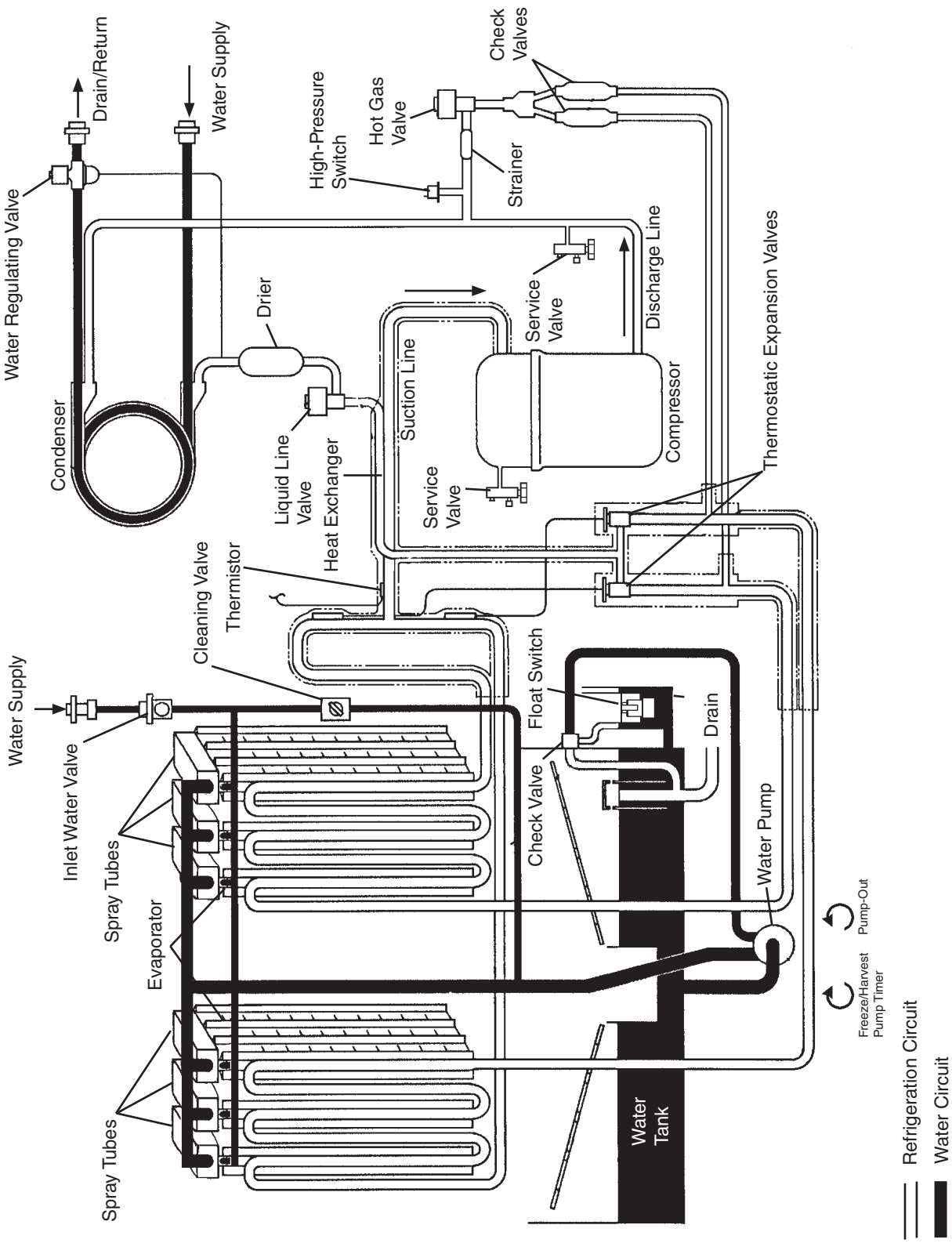


D. Water/Refrigeration Circuit Diagram

1. Air-Cooled Models (SAH/3)

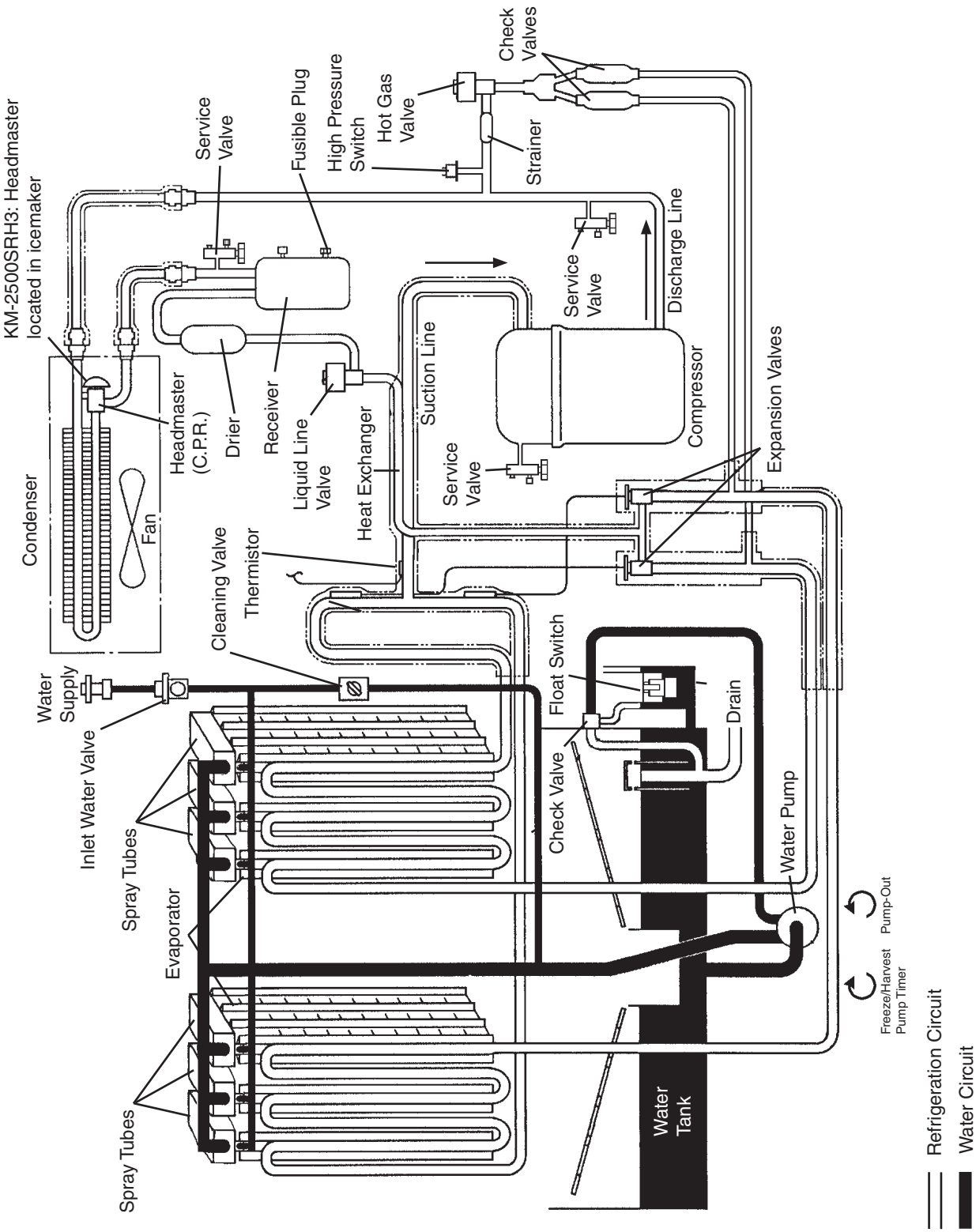


2. Water-Cooled Models (SWH/3/-M)



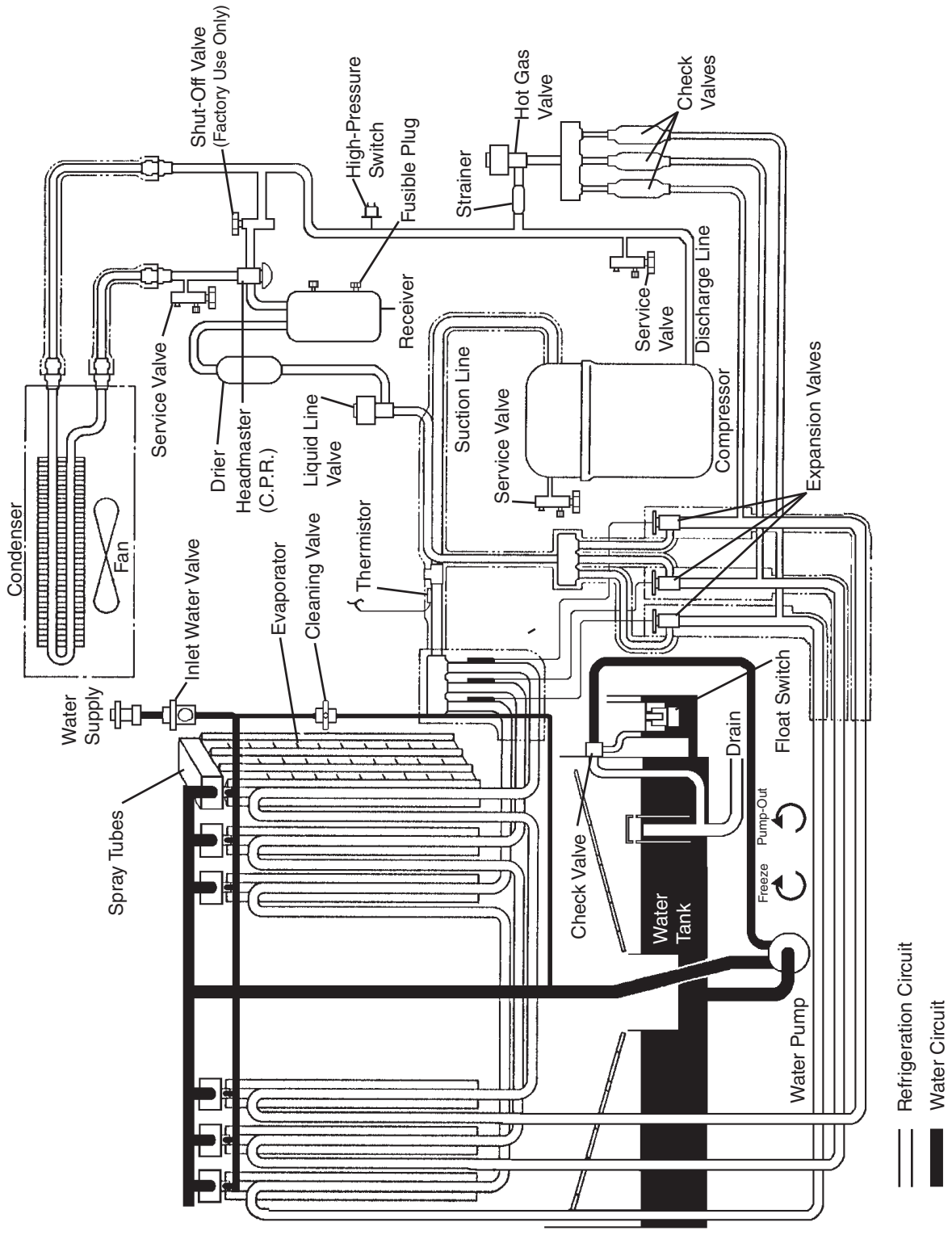
3a. Remote Models (SRH/3) Except KM-2500SRH3

Condenser Unit with Headmaster (CPR)



3b. Remote Models (SRH3) KM-2500SRH3

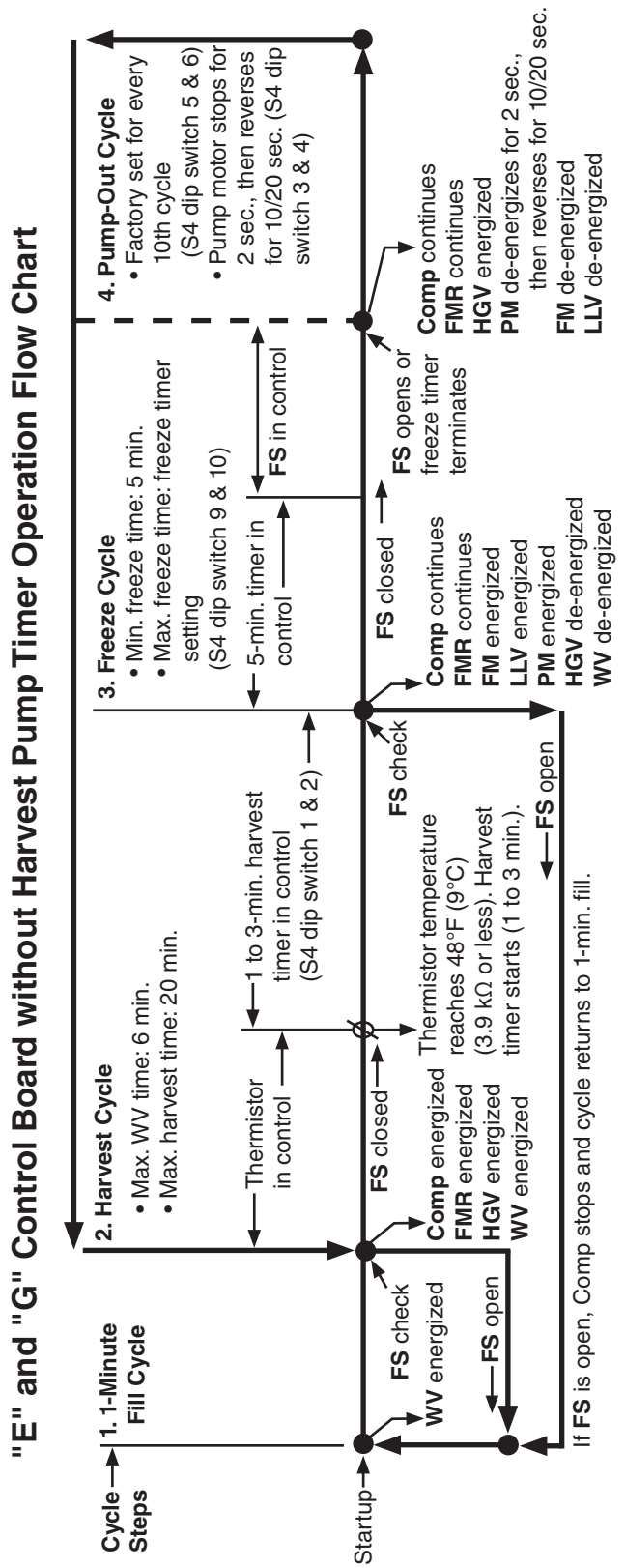
Condenser Unit without Headmaster (CPR)



II. Sequence of Operation and Service Diagnosis

A. Sequence of Operation Flow Chart

1. "E" and "G" Control Board without Harvest Pump Timer Operation


"E" and "G" Control Board without Harvest Pump Timer Operation Flow Chart
Cycle Steps
1. 1-Minute Fill Cycle
2. Harvest Cycle
• Max. WV time: 6 min.
• Max. harvest time: 20 min.
3. Freeze Cycle
• Min. freeze time: 5 min.
• Max. freeze time: freeze timer setting (S4 dip switch 9 & 10)
4. Pump-Out Cycle
• Factory set for every 10th cycle (S4 dip switch 5 & 6)
• Pump motor stops for 2 sec., then reverses for 10/20 sec. (S4 dip switch 3 & 4)
Startup
FS check
WV energized
FS open
Thermistor in control
1 to 3-min. harvest timer in control (S4 dip switch 1 & 2)
5-min. timer in control
FS in control
FS closed
Comp energized
FMR energized
HGV energized
WV energized
Thermistor temperature reaches 48°F (9°C) (3.9 kΩ or less). Harvest timer starts (1 to 3 min.).
FS check
FS closed
Comp continues
FMR continues
FM energized
LLV energized
PM energized
HGV de-energized
WV de-energized
FS open
FS opens or freeze timer terminates
Comp continues
FMR continues
HGV energized
PM de-energizes for 2 sec., then reverses for 10/20 sec.
FM de-energized
LLV de-energized
If FS is open, Comp stops and cycle returns to 1-min. fill.

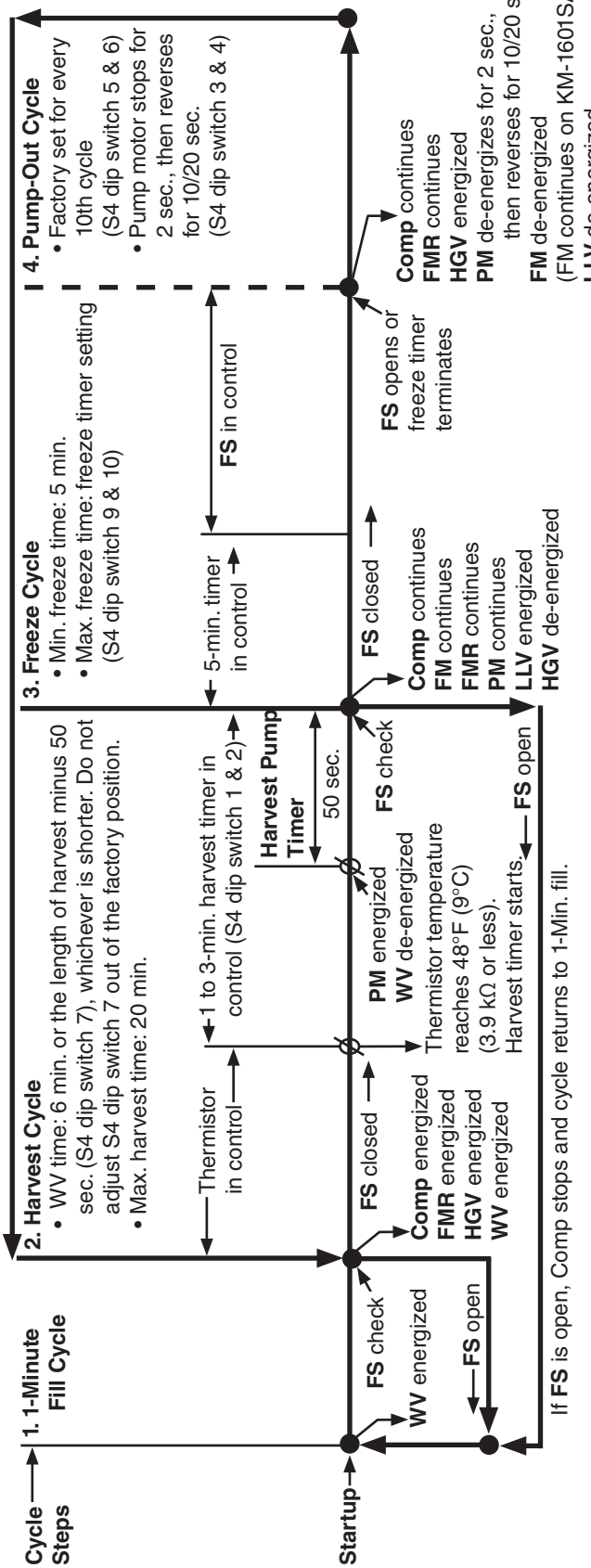
Components Energized when the Control Switch is in the "WASH" Position

The "WASH" position on the control switch is used when cleaning and sanitizing the icemaker. When in the "WASH" position, power is supplied to the pump motor. With the cleaning valve closed, the cleaner and sanitizer flow over the outside of the evaporator plate assembly. With the cleaning valve open, the cleaner and sanitizer flow over both the outside and the inside of the evaporator plate assembly.

Note: Close the cleaning valve after cleaning and sanitizing are complete, otherwise the icemaker will not restart when the control switch is placed in the "ICE" position.

Legend:
BC–bin control
Comp–compressor
FM–fan motor
FMR–fan motor-remote
FS–float switch
HGV–hot gas valve
LLV–liquid line valve
PM–pump motor
WV–inlet water valve

2. "G" Control Board with Harvest Pump Timer Operation


"G" Control Board with Harvest Pump Timer Operation Flow Chart
Cycle Steps
Startup
1. 1-Minute Fill Cycle
WV energized
FS check
FS open
2. Harvest Cycle
• WV time: 6 min. or the length of harvest minus 50 sec. (S4 dip switch 7), whichever is shorter. Do not adjust S4 dip switch 7 out of the factory position.
• Max. harvest time: 20 min.
Thermistor in control
1 to 3-min. harvest timer in control (S4 dip switch 1 & 2)
FS closed
Comp energized
FMR energized
HGV energized
WV energized
PM energized
WV de-energized
Thermistor temperature reaches 48°F (9°C) (3.9 kΩ or less).
Harvest timer starts.
Harvest Pump Timer
50 sec.
FS check
FS open
If FS is open, Comp stops and cycle returns to 1-Min. fill.
3. Freeze Cycle
• Min. freeze time: 5 min.
• Max. freeze time: freeze timer setting (S4 dip switch 9 & 10)
5-min. timer in control
FS in control
FS closed
Comp continues
FM continues
FMR continues
PM continues
LLV energized
HGV de-energized
FS opens or freeze timer terminates
4. Pump-Out Cycle
• Factory set for every 10th cycle (S4 dip switch 5 & 6)
• Pump motor stops for 2 sec., then reverses for 10/20 sec. (S4 dip switch 3 & 4)
Comp continues
FMR continues
HGV energized
PM de-energizes for 2 sec., then reverses for 10/20 sec.
FM de-energized
(FM continues on KM-1601SAH)
LLV de-energized

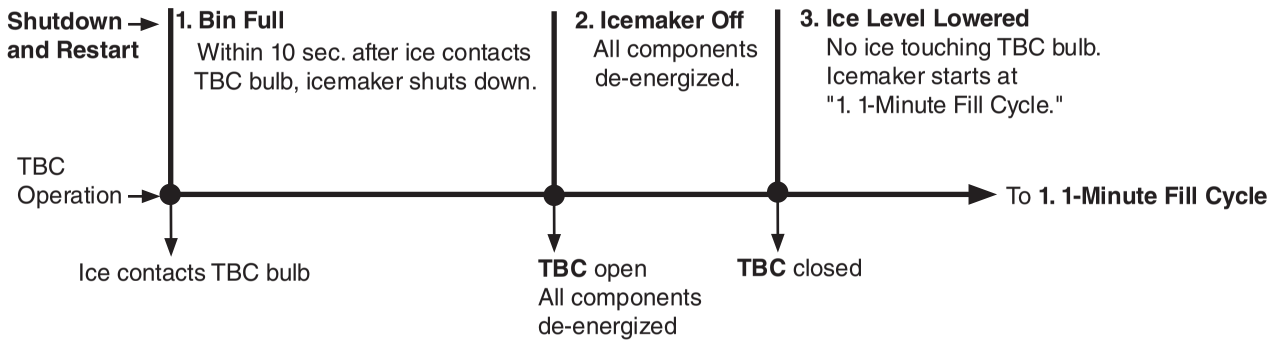
Legend:
BC–bin control
Comp–compressor
FM–fan motor
FMR–fan motor-remote
FS–float switch
HGV–hot gas valve
LLV–liquid line valve
PM–pump motor
WV–inlet water valve

Components Energized when the Control Switch is in the "WASH" Position

The "WASH" position on the control switch is used when cleaning and sanitizing the unit. When in the "WASH" position, power is supplied to the pump motor. With the cleaning valve closed, the cleaner and sanitizer flow over the outside of the evaporator plate assembly. With the cleaning valve open, the cleaner and sanitizer flow over both the outside and the inside of the evaporator plate assembly.

Note: Close the cleaning valve after cleaning and sanitizing are complete, otherwise the unit will not restart when the control switch is placed in the "ICE" position.

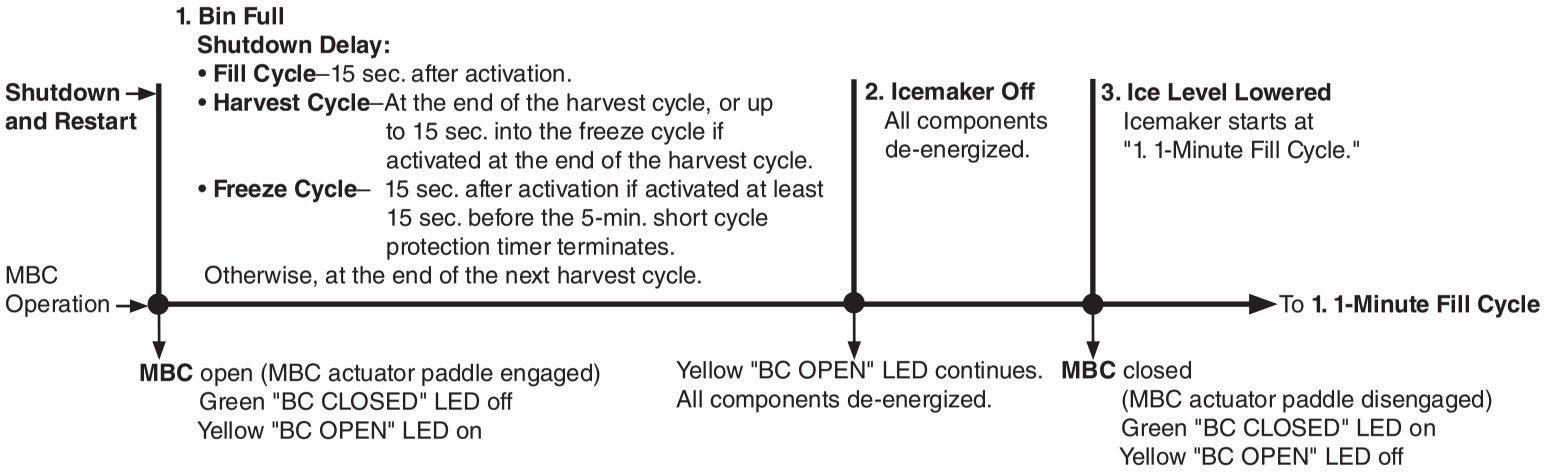
"E" and "G" Control Board with Thermostatic Bin Control Shutdown Sequence Flow Chart


Shutdown and Restart
1. Bin Full
Within 10 sec. after ice contacts TBC bulb, icemaker shuts down.
2. Icemaker Off
All components de-energized.
3. Ice Level Lowered
No ice touching TBC bulb.
Icemaker starts at "1. 1-Minute Fill Cycle."
TBC Operation
To 1. 1-Minute Fill Cycle
Ice contacts TBC bulb
TBC open
All components de-energized
TBC closed

NOTE: "G" control board green "BC CLOSED" LED on continuously when the K4 jumper is in place.

Legend:
BC–bin control
TBC–themostatic bin control

"G" Control Board Mechanical Bin Control Shutdown Sequence Flow Chart


1. Bin Full
Shutdown Delay:
• Fill Cycle–15 sec. after activation.
• Harvest Cycle–At the end of the harvest cycle, or up to 15 sec. into the freeze cycle if activated at the end of the harvest cycle.
• Freeze Cycle– 15 sec. after activation if activated at least 15 sec. before the 5-min. short cycle protection timer terminates.
Otherwise, at the end of the next harvest cycle.
Shutdown and Restart
MBC Operation
2. Icemaker Off
All components de-energized.
3. Ice Level Lowered
Icemaker starts at "1. 1-Minute Fill Cycle."
To 1. 1-Minute Fill Cycle
MBC open (MBC actuator paddle engaged)
Green "BC CLOSED" LED off
Yellow "BC OPEN" LED on
Yellow "BC OPEN" LED continues.
All components de-energized.
MBC closed
(MBC actuator paddle disengaged)
Green "BC CLOSED" LED on
Yellow "BC OPEN" LED off

Legend:
BC–bin control
MBC–mechanical bin control

B. Service Diagnosis

⚠ WARNING

- The appliance should be diagnosed and repaired only by qualified service personnel to reduce the risk of death, electric shock, serious injury, or fire.
- Risk of electric shock. Control switch in "OFF" position does not de-energize all loads Use extreme caution and exercise safe electrical practices.
- Moving parts (e.g., fan blade) can crush and cut. Keep hands clear.
- Before servicing the appliance, move the control switch to the "OFF" position and turn off the power supply.
- **CHOKING HAZARD:** Ensure all components, fasteners, and thumbscrews are securely in place after the appliance is serviced. Make sure that none have fallen into the dispenser unit/ice storage bin.
- Make sure all food zones in the appliance and dispenser unit/ice storage bin are clean after service.

The diagnostic procedure is a sequence check that allows you to diagnose the electrical system and components. Before proceeding, check for correct installation, proper voltage per nameplate, and adequate water supply. Check CB using the steps in "II.C. Control Board Check." Check dip switch settings to assure that S4 dip switch 3, 4, 7, 8, 9, 10 and S5 dip switch 1 through 5 ("G" CB) are in the factory default position. S4 dip switch 1, 2, 5, 6 are cleaning adjustments and the settings are flexible. For factory default settings, see "III.C.1. Default Dip Switch Settings."

Note:
- When checking high voltage (115VAC), always choose a white (W) neutral wire to establish a good neutral connection.
- On models with a main transformer, the neutral (W) is provided through MT. To confirm a good neutral, check for 60VAC from white (W) neutral to ground (GND). If 60VAC is present, neutral is good. If 60VAC is not present, check 208-230VAC main power supply to MT. If 208-230VAC is present, check MT continuity.
- When checking voltage from the CB K1 connector (10 pin connector), pull CB K1 connector out slightly to allow room for multimeter test leads contact.

1) Turn off the power supply, then access the control box. Move the control switch to the "OFF" position. Clear any ice from TBC.

2) Check that BC is closed and the 115VAC 10A fuse is good.

1. "E" and "G" Control Board without Harvest Pump Timer Diagnosis

3) **Power On**: Turn on the power supply, then move the control switch to the "ICE" position. A 5-sec. delay occurs.
   - "E" Control Board: CB red "POWER OK" LED turns on.
   - "G" Control Board: CB red "POWER OK" LED and green "BC CLOSED" LED turn on.

   Note: • CB red "POWER" LED remains on unless the 10.5VAC power supply is interrupted (K2 connector).
   - Check CB using the steps in "II.C. Control Board Check."
   - "G" CB: If yellow "BC OPEN" LED is on, check that CB red K4 jumper is in place.

   a) **Power On Diagnosis:** If CB red "POWER OK" LED is off, confirm closed TBC and 10A fuse is good. If TBC is open, remove ice from bulb and warm bulb in hand. If TBC does not close, replace TBC. See "II.D. Bin Control Check." Check for 115VAC at control switch #1 (BK) to neutral (W) then at control switch #2 (P) to neutral (W). If 115VAC is present on control switch #1 (BK) and not on control switch #2 (P), replace control switch. If 115VAC is present on control switch #2 (P), check for 115VAC at HPS (P) to neutral (W), then HPS (BK) to neutral (W). If 115VAC is present at HPS (P) and not at HPS (BK), HPS is open. See HPS Diagnosis below. If 115VAC is present at HPS (BK), check for 10.5VAC at CB K2 #1 (R) to CB K2 #2 (R). If 10.5VAC is not present, confirm that the cleaning valve interlock switch is closed. Next, check CT continuity. If open, replace CT.

   b) **HPS Diagnosis:** Confirm FM is energized and fan blade turns freely. Confirm condenser coil is not dirty. Confirm that the location meets installation requirements. See the appliance's instruction manual for details. Confirm there are no restrictions in the refrigeration circuit.
   Harvest Cycle: HGV, strainer, or check valve.
   Freeze Cycle: FM, FMR, TXV, HM, LLV, WRV, strainer, check valve, drier, damaged line set or fitting, and fan blade for binding.
   Let refrigeration circuit pressures equalize. If HPS does not reset and pressures are equalized, replace HPS. If pressures are not equalized, reclaim refrigerant and diagnose refrigeration circuit restriction.

4) **1-Minute Fill Cycle – LED 4 is on.** WV energizes. After 1 min., CB checks for a closed FS. If FS is closed, harvest cycle begins. If harvest cycle begins (Comp, HGV, and FMR energize), continue to step 5. If FS is open, WV remains energized through additional 1-min. fill cycles until water enters the water tank and FS closes (low water safety protection during initial start up and at the end of each harvest). **Diagnosis:** Check that water enters the water tank. If not, check that the water supply line shut-off valve is open and screens or external filters are clear. Check for 115VAC at CB K1 #6 (O) to neutral (W). If 115VAC is not present, replace CB. If 115VAC is present, and WV does not energize, check for 115VAC at WV. If 115VAC is present, check coil continuity. If open, replace WV. If the water tank fills, but the appliance fails to start harvest (Comp energized), check for open FS. See "II.E. Float Switch Check and Cleaning." If FS is closed and CB fails to start the harvest cycle after 1 min., replace CB.

5) **Initial Harvest Cycle – LEDs 1, 4, and 2 are on.** WV continues. Comp, FMR, and HGV energize. CB monitors the warming of the evaporator via the thermistor located on the suction line. When the thermistor reaches 48°F (9°C), CB reads 3.9 kΩ from the thermistor and turns harvest termination over to the harvest timer (S4 dip switch 1 & 2). The harvest timer has settings of 60, 90, 120, and 180 sec. The pump-out timer (S4 dip switch 3 & 4) acts in place of the harvest timer during cycles with a pump-out (S4 dip switch 5 & 6). WV remains energized during harvest for a maximum of 6 min. or the length of harvest, whichever is shorter.

a) **Comp Diagnosis**: Check that evaporator is warming. If not, confirm that Comp energizes. If not, check for 115VAC at CB K1 #1 (V) or #9 (V) to neutral (W). If 115VAC is not present, check for 115VAC at CB K1 #7 (BR) or #10 (BR) to neutral (W). If 115VAC is present at CB #7 (BR) or #10 (BR) and not at CB #1 (V) or #9 (V), replace CB. If 115VAC is present, check for 115VAC at MC solenoid. If 115VAC is present, confirm contacts are closed. If not, replace MC. If MC contacts are closed, check Comp start and run capacitors, Comp start relay, and Comp motor winding.

b) **HGV Diagnosis**: If Comp is energized and evaporator is not warming, check that HGV energizes and opens. Check for 115VAC at CB K1 #2 (P) to neutral (W). If 115VAC is not present, replace CB. If 115VAC is present, check for 115VAC at HGV coil and check HGV coil continuity. Replace as needed.

c) **LLV Diagnosis**: Confirm that LLV is de-energized and closed (not bypassing). If energized, replace CB. If de-energized and bypassing, replace LLV.

d) **WRV Diagnosis**: Confirm WRV is not leaking by.

e) **Initial Harvest Cycle Termination Diagnosis**: When the thermistor reaches 48°F (9°C), CB reads 3.9 kΩ from the thermistor and turns harvest termination over to the harvest timer (S4 dip switch 1 & 2). Check discharge line temperature. For a thermistor check, see "II.F. Thermistor Check." If 1-min. fill cycle starts after harvest timer terminates, check that FS is clean and operating properly. See "II.E. Float Switch Check and Cleaning." If FS is closed, CB proceeds to the next cycle. If not, replace CB.

Note: The min. total time allowed by CB for a complete harvest cycle is 2 min. Max. harvest time allowed is 20 min.

NOTICE! **On models with "G" control board and no harvest pump timer relays, S4 dip switch 7 must remain off. Otherwise, PM energizes in reverse direction the last 50 seconds of harvest and empties water from water tank.**

6) **Freeze Cycle – LED 1 is on.** Comp and FMR continue. PM, FM, and LLV energize. WV and HGV de-energize. Appliance is held in freeze by a 5-min. short cycle protection timer. After 5-min. timer terminates and FS opens, freeze cycle terminates.

a) **Freeze Cycle Diagnosis:** Confirm Comp and FMR continue. Confirm that PM, FM, and LLV energize. Confirm WRV opens. Next, confirm WV and HGV de-energize. During the first 5 min. of freeze, confirm evaporator is cooling. If not, confirm WV de-energized (not leaking by), HGV de-energized (not bypassing), LLV and FM energize, TXV and HM operate correctly, WRV opens, Comp is efficient, and refrigerant charge is correct. See "VIII.A. Specification and Performance Data."

b) **Comp and FMR Diagnosis**: If Comp and FMR de-energize once freeze begins, check that appliance has not shut off on HPS ("POWER OK" LED off). If so, check "3)b) HPS Diagnosis" above. If "POWER OK" LED is on, check for 115VAC at CB K1 #1 (V) or #9 (V) to neutral (W). If 115VAC is not present and LED 1 is on, replace CB. If 115VAC is present, check for 115VAC at CR or MC coil. If 115VAC is present, check CR or MC coil and contact continuity. Replace as needed. If CR or MC is ok, check Comp external overload, start relay, and start and run capacitors. Next, check Comp motor winding continuity. If Comp is energized but evaporator is not cooling, check for an inefficient Comp. See "VIII.A. Specification and Performance Data."
If Comp is energized but FMR is not, check for 115VAC at the FMR junction box. If 115VAC is not present, check icemaker wiring connections. If 115VAC is present, check for voltage at condenser unit. If 115VAC is not present, check field wiring connections. If 115VAC is present, check FMR capacitor, motor winding, and fan blade for binding.

c) **WV and HGV Diagnosis**: If WV is energized, check for 115VAC at CB K1 #6 (O) to neutral (W). If 115VAC is present after PM energizes, replace CB. If 115VAC is not present, replace WV (bypassing). If HGV did not de-energize, check for 115VAC at CB K1 #2 (P) to neutral (W). If 115VAC is present after PM energizes, replace CB. If 115VAC is not present, replace HGV (bypassing).

d) **PM Diagnosis**: Confirm water is flowing over evaporator from PM and not WV. If PM de-energizes once freeze begins, check for 115VAC at CB K1 #4 (R) to neutral (W). If 115VAC is not present, replace CB. If 115VAC is present and PM is de-energized, check for 115VAC at control switch #5 (R) to neutral (W). If 115VAC is present at CB K1 #4 (R) and not at control switch #5 (R), check control switch continuity between #5 (R) and #4 (R). Replace as needed. If 115VAC is present at control switch #5 (R) to neutral (W), check PM impeller for binding, PM capacitor, and motor winding continuity.

e) **FM and LLV Diagnosis**: If FM or LLV does not energize, check for 115VAC at CB K1 #3 (BK) to neutral (W). If 115VAC is not present, replace CB. If 115VAC is present:
For FM: check capacitor, motor winding, and blade for binding.
For LLV: check coil voltage and continuity.

f) **Refrigerant Pressures, HM, and TXV Diagnosis**: If evaporator is still not cooling, check refrigerant pressures. See "VIII.A. Specification and Performance Data." Next, check HM operation. If refrigeration pressures are above HM setpoint and HM is bypassing, replace HM. Check TXV for proper operation. Remove TXV bulb and hold it in your hand, refrigerant low-side pressure should rise, place TXV bulb in ice water, refrigerant low-side pressure should drop. A 10 to 15 pound pressure swing between warm and cold conditions indicate a good TXV. If a 10 to 15 pound swing is not present, replace TXV.

g) **WRV Diagnosis**: WRV is factory set and generally no adjustment is required. If WRV fails to open in freeze, check for proper refrigerant pressures. See "VIII.A. Specification and Performance Data." If refrigerant pressures are correct and WRV does not open, adjust or replace as needed. See "IV.C. Water Regulating Valve Adjustment (water-cooled models)."

h) **Freeze Termination Diagnosis:** After 5 min. in freeze, disconnect CB K5 FS connector. 15 sec. later appliance should switch out of the freeze cycle (15 second delay after FS opens before terminating the freeze cycle). If appliance remains in freeze longer than 15 sec. after FS removed, replace CB. If appliance switches with FS removed but would previously not switch out of freeze with FS connected (long freeze - 3 beep alarm), see "II.E. Float Switch Check and Cleaning."

Note: Normal freeze cycle will last 20 to 40 min. depending on model and conditions. Cycle times and pressures should follow performance data provided in this manual. See "VIII.A. Specification and Performance Data."

i) **Short Freeze Cycle Diagnosis**: Confirm water tank fills and overflows during 1 min. fill and harvest cycles. If not, check water supply filters, shut-off valve, WV screen. If water tank empties before 5 min. timer terminates and freeze cycle is short, check that CV is not leaking by (water flowing down the potable drain). If CV is leaking by, remove and clean CV, replace rubber seat and spring if necessary. If water tank is full, see "II.E. Float Switch Check and Cleaning" for erratic operating FS.

7) **Pump-Out Cycle – LEDs 1, 3, and 2 are on (10/20 second pump-out).** Timing of the first pump-out is dependent on CB. "E" CB first pump-out is after the first freeze cycle. "G" CB first pump-out is determined by S4 dip switch 5 & 6. See the table below.

"E" & "G" Control Board Settings			1st Pump-Out	
S4 Dip Switch Setting		Pump-Out Frequency	"E" Control Board	"G" Control Board
No. 5	No. 6			
OFF	OFF	Every cycle	After 1st freeze cycle	After 2nd freeze cycle
ON	OFF	Every 2 cycles		After 3rd freeze cycle
OFF	ON	Every 5 cycles		After 6th freeze cycle
ON	ON	Every 10 cycles		After 11th freeze cycle

Comp and FMR continue, HGV energizes. If S4 dip switch 3 & 4 are set to 3 off and 4 on, LED 4 turns on and WV energizes. FM and LLV de-energize. PM stops for 2 sec., then reverses for 10/20 sec. depending on pump-out timer (S4 dip switch 3 & 4) setting. When the pump-out timer terminates, pump-out is complete. The pump-out frequency control (S4 dip switch 5 & 6) is factory set, and generally no adjustment is required. However, the pump-out frequency control can be set to have a pump-out occur every cycle, or every 2, 5, or 10 cycles. For details, see "III.C.4. Pump-Out Frequency Control (S4 dip switch 5 & 6)."

Pump-Out Diagnosis: In the freeze cycle before pump-out (see table above), disconnect CB black K5 connector (FS connector) after 5 min. of freeze. Check that PM stops and re-starts and water is flowing down the drain through CV. If PM does not stop and re-start, check that CB LEDs 1, 3, and 2 are on. If not, replace CB. If LEDs 1, 3, and 2 are on and PM does not energize, check for 115VAC at CB K1 #5 (DBU) to neutral (W). If 115VAC is not present, replace CB. If 115VAC is present, make sure the drain line is not clogged and that CV is clean and operating properly.

Confirm FM and LLV de-energize. If FM or LLV is energized with LEDs 1, 3, and 2 on, replace CB.

8) **Normal Harvest Cycle** – Same as the initial harvest cycle. Return to step 5 above.
Note: Appliance continues to cycle until BC is satisfied or power is turned off. The appliance always restarts at the 1-min. fill cycle.

9) **Shutdown**: **"E" and "G" Control Board**
When the appliance is running, hold ice in contact with the thermostatic bulb. TBC switch opens within 10 sec., shutting down the appliance. TBC is factory set, and generally no adjustment is required. However, adjustment may be needed in some conditions, particularly at higher altitude locations. **Diagnosis:** See "II.D. Bin Control Check." ***NOTICE!*** **Do not adjust S4 dip switch 7 out of the factory default position. This dip switch must be left in the factory default position or the appliance will not operate correctly.**
"G" Control Board: CB red K4 connector must have the jumper in place. When the jumper is in place, the green "BC CLOSED" LED remains on. If the jumper is not in place, yellow "BC OPEN" LED turns on and the icemaker turns off and remains off until the jumper is replaced in its original position.

Legend: **BC**–bin control; **CB**–control board; **CR**–compressor relay; **CT**–control transformer; **Comp**–compressor; **CV**–check valve; **FM**–fan motor; **FMR**–fan motor-remote; **FS**–float switch; **HGV**–hot gas valve; **HM**–headmaster (C.P.R.); **HPS**–high-pressure switch; **LLV**–liquid line valve; **MC**–magnetic contactor; **MT**–main transformer; **PM**–pump motor; **TBC**–thermostatic bin control; **TXV**–thermostatic expansion valve; **WRV**–water regulating valve; **WV**–inlet water valve

2. "G" Control Board with Harvest Pump Timer Diagnosis

3) **Power On**: Turn on the power supply, then move the control switch to the "ICE" position. A 5-sec. delay occurs. CB red "POWER OK" LED and green "BC CLOSED" LED turn on. If yellow "BC OPEN" LED is on, check CB K4 jumper.

Note: • CB red "POWER OK" LED remains on unless the 10.5VAC power supply is interrupted (K2 connector).

• Check CB using the steps in "II.C. Control Board Check."

• Confirm CB green "BC CLOSED" LED is on. If CB yellow "BC OPEN" LED is on, confirm CB K4 jumper is in place. Otherwise, CB yellow "BC OPEN" LED is on and appliance will not start.

a) **Power On Diagnosis:** If CB red "POWER OK" LED is off, confirm 10A fuse is good. Check for 115VAC at control switch #1 (BR or BK) to neutral (W) then at control switch #2 (P) to neutral (W). If 115VAC is present on #1 (BR or BK) and not on #2 (P), replace control switch. If 115VAC is present on control switch #2 (P), check for 115VAC at HPS (P) to neutral (W) then HPS (BK) to neutral (W). If 115VAC is present at HPS (P) and not at HPS (BK), HPS is open. See HPS Diagnosis below. If 115VAC is present at HPS (BK), check for 10.5VAC at CB K2 #1 red wire to CB K2 #2 red wire. If 10.5VAC is not present, check that the cleaning valve interlock switch is closed. Next, check CT continuity. If open, replace CT.

b) **HPS Diagnosis:** Confirm FM is energized and fan blade turns freely. Confirm condenser coil is not dirty. Confirm that the location meets installation requirements. See the appliance's instruction manual for details. Confirm there are no restrictions in the refrigeration circuit.
Harvest Cycle: HGV, strainer, or check valve.
Freeze Cycle: FM, FMR, TXV, HM, LLV, WRV, strainer, check valve, drier, damaged line set or fitting, and fan blade for binding.
Let refrigeration circuit pressures equalize. If HPS does not reset and pressures are equalized, replace HPS. If pressures are not equalized, reclaim refrigerant and diagnose refrigeration circuit restriction.

4) **1-Min. Fill Cycle – LED 4 is on.** WV and X11 relay energize. After 1 min., CB checks for a closed FS. If FS is closed, the harvest cycle begins. If harvest cycle begins (Comp, HGV, FMR energized), continue to step 5a. If FS is open, WV remains energized through additional 1-min. fill cycles until water enters the water tank and FS closes (low water safety protection during initial start up and at the end of each harvest). **Diagnosis:** Check that water enters the water tank. If not, check that the water supply line shut-off valve is open and screens or external filters are clear. Check for 115VAC at CB K1 #6 (O) to neutral (W). If 115VAC is not present, replace CB. If 115VAC is present, and WV does not energize, check for 115VAC at WV. If 115VAC is present, check coil continuity. If open, replace WV. If the water tank fills, but the appliance fails to start harvest (Comp energized), check for open FS. See "II.E. Float Switch Check and Cleaning." If FS is closed and CB fails to start the harvest cycle after 1 min., replace CB.

5a) **Initial Harvest Cycle – LEDs 1, 4, and 2 are on.** WV and X11 relay continue. Comp, FMR, HGV, and X10 relay energize. CB monitors the warming of the evaporator via the thermistor located on the suction line. When the thermistor reaches 48°F (9°C), CB reads 3.9 kΩ from the thermistor and turns harvest termination over to the harvest timer (S4 dip switch 1 & 2). The harvest timer has settings of 60, 90, 120, and 180 sec. The pump-out timer (S4 dip switch 3 & 4) acts in place of the harvest timer during cycles with a pump-out (S4 dip switch 5 & 6). WV and X11 relay are energized during harvest for a maximum of 6 min. or the length of harvest minus 50 sec., whichever is shorter. 50 sec. before harvest terminates, PM energizes. See step 5b below.

a) **Comp Diagnosis**: Check that evaporator is warming. If not, confirm that Comp energizes. If not, check for 115VAC at CB K1 #1 (V) or #9 (V) to neutral (W). If 115VAC is not present, check for 115VAC at CB K1 #7 (BR) or #10 (BR) to neutral (W). If 115VAC is present at #7 (BR) or #10 (BR) and not at #1 (V) or #9 (V), replace CB. If 115VAC is present, check for 115VAC at CR or MC solenoid. If 115VAC is present, confirm contacts are closed. If not, replace CR or MC. If CR or MC contacts are closed, check Comp external overload, Comp start and run capacitors, Comp start relay, and Comp motor winding. If Comp is energized and evaporator is not warming, check that HGV energizes and opens. Check for 115VAC at CB K1 #2 (P) to a neutral (W). If 115VAC is not present and LED 2 is on, replace CB. If 115VAC is present, check coil voltage and continuity. Replace as needed. Confirm that LLV is de-energized and closed (not bypassing). If energized, replace CB. If de-energized and bypassing, replace LLV. Confirm WRV is not leaking by. If evaporator is warming, PM energizes for the last 50 sec. of harvest.

b) **HGV Diagnosis**: If Comp is energized and evaporator is not warming, check that HGV energizes and opens. Check for 115VAC at CB K1 #2 (P) to neutral (W). If 115VAC is not present, replace CB. If 115VAC is present, check for 115VAC at HGV coil and check HGV coil continuity. Replace as needed.

c) **LLV Diagnosis**: Confirm that LLV is de-energized and closed (not bypassing). If energized, replace CB. If de-energized and bypassing, replace LLV.

d) **WRV Diagnosis**: Confirm WRV is not leaking by.

5b) **Harvest Pump Timer – LEDs 1, 3, and 2 are on.** When the thermistor reaches 48°F (9°C), CB reads 3.9 kΩ from the thermistor and turns harvest termination over to the harvest timer (S4 dip switch 1 & 2). 50 sec. before the harvest timer terminates, LED 3 turns on and PM energizes. Comp, FMR, HGV, and X10 relay continue. LED 4 turns off, WV and X11 relay de-energize.

Diagnosis: Place a thermometer on the suction line next to the thermistor. Has it warmed to 48°F (9°C) or warmer? Confirm thermistor status. See "II.F. Thermistor Check." If the thermistor reading is in proper range, dip switch 7 is on, and PM does not energize 50 sec. before harvest terminates, replace CB. If WV continues, check for 115VAC at CB K1 #6 (O). If 115VAC is present, and LED 4 is off, replace CB. If LED 3 is on and PM is not energized, check for 115VAC at CB K1 #5 (DBU). If 115VAC is not present, replace CB. If 115VAC is present and PM is not energized, check for 115VAC at X10 relay terminal #7 (Y) to neutral (W). If 115VAC is not present, check for 115VAC at X10 relay terminal #3 (P) to neutral (W) and X10 relay terminal #5 (Y) to neutral (W).

If 115VAC is present on terminal #3 (P) and not on terminal #5 (Y), replace X10 relay. If 115VAC is present on X10 relay terminal #7 (Y) and PM is not energized, check for 115VAC at X10 relay terminal #4 (R) to neutral (W) and terminal #6 (DBU) to neutral (W). If 115VAC is present on terminal #6 (DBU) and not on terminal #4 (R), replace X10 relay. If 115VAC is present on X10 relay terminal #4 (R), check control switch contact continuity between terminals #4 (R) and #5 (R). If contacts are open, replace control switch. If contacts are closed and 115VAC is present between control switch terminal #5 (R) and neutral (W), check PM capacitor and motor winding continuity.

5c) **Initial Harvest Cycle Termination Diagnosis**: When the thermistor reaches 48°F (9°C), CB reads 3.9 kΩ from the thermistor and turns harvest termination over to the harvest timer (S4 dip switch 1 & 2). Check discharge line temperature. For a thermistor check, see "II.F. Thermistor Check." If 1-min. fill cycle starts after harvest timer terminates, check that FS is clean and operating properly, see "II.E. Float Switch Check and Cleaning." If FS is closed, CB proceeds to the next cycle. If not, replace CB.
Note: The minimum total time allowed by CB for a complete harvest cycle is 2 min. Maximum harvest time allowed is 20 min.

***NOTICE!* S4 dip switch 7 must remain on. Otherwise, PM will not energize during the last 50 sec. of harvest.**

6) **Freeze Cycle – LED 1 is on.** Comp, FMR, and PM continue. FM and LLV energize. HGV and X10 relay de-energize. Appliance is held in freeze by a 5-min. short cycle protection timer. After 5-min. timer terminates and FS opens, freeze cycle terminates.
Note: PM power supply switches from CB K1 #5 (DBU) in harvest to K1 #4 (R) in freeze.

a) **Freeze Cycle Diagnosis**: Confirm Comp, FMR, and PM continue. Confirm that FM and LLV energize. Confirm WRV opens. Next, confirm HGV and X10 relay de-energize. During the first 5 min. of freeze, confirm evaporator is cooling. If not, confirm WV de-energized (not leaking by), HGV de-energized (not bypassing), LLV and FM energize, TXV and HM operate correctly, WRV opens, Comp is efficient, and refrigerant charge is correct. See "VIII.A. Specification and Performance Data."

b) **Comp and FMR Diagnosis**: If Comp and FMR de-energize once freeze begins, check that appliance has not shut off on HPS ("POWER OK" LED off). If so, check "3)b) HPS Diagnosis" above. If "POWER OK" LED is on, check for 115VAC at CB K1 #1 (V) or #9 (V) to neutral (W). If 115VAC is not present and LED 1 is on, replace CB. If 115VAC is present, check for 115VAC at CR or MC coil. If 115VAC is present, check CR or MC coil and contact continuity. Replace as needed. If CR or MC is okay, check Comp start relay and start and run capacitors. Next, check Comp motor winding continuity. If Comp is energized but evaporator is not cooling, check for an inefficient Comp. See "VIII.A. Specification and Performance Data." If Comp is energized but FMR is not, check for 115VAC at the FMR junction box. If 115VAC is not present, check icemaker wiring connections. If 115VAC is present, check for voltage at condenser unit. If 115VAC is not present, check field wiring connections. If 115VAC is present, check FMR capacitor, motor winding, and fan blade for binding.

c) **WV and HGV Diagnosis**: If WV is energized, check for 115VAC at CB K1 #6 (O) to neutral (W). If 115VAC is present after PM energizes in harvest cycle, replace CB. If 115VAC is not present, replace WV (bypassing). If HGV did not de-energize at the end of harvest, check for 115VAC at CB K1 #2 (P) to neutral (W). If 115VAC is present 50 sec. after PM energizes, replace CB. If 115VAC is not present, replace HGV (bypassing).

d) **PM Diagnosis**: Confirm water is flowing over evaporator from PM and not WV. If PM de-energizes once freeze begins, check for 115VAC at CB K1 #4 (R) to neutral (W). If 115VAC is not present, replace CB. If 115VAC is present and PM is de-energized, check for 115VAC at control switch #5 (R) to neutral (W). If 115VAC is present at CB K1 #4 (R) and not at control switch #5 (R), check control switch continuity between #5 (R) and #4 (R). Replace as needed. If 115VAC is present at control switch #5 (R) to neutral (W), check PM capacitor and motor winding continuity.

e) **FM and LLV Diagnosis**: If FM or LLV does not energize, check for 115VAC at CB K1 #3 (BK) to neutral (W). If 115VAC is not present, replace CB. If 115VAC is present:
For FM, check capacitor, motor winding, and blade for binding.
For LLV, check coil voltage and continuity.

f) **Refrigerant Pressures, HM, and TXV Diagnosis**: If evaporator is still not cooling, check refrigerant pressures. See "VIII.A. Specification and Performance Data." Next, check HM operation. If refrigeration pressures are above HM setpoint and HM is bypassing, replace HM. Check TXV for proper operation. Remove TXV bulb and hold it in your hand, refrigerant low-side pressure should rise, place TXV bulb in ice water, refrigerant low-side pressure should drop. A 10 to 15 pound pressure swing between warm and cold conditions indicate a good TXV. If a 10 to 15 pound swing is not present, replace TXV.

g) **WRV Diagnosis**: WRV is factory set and generally no adjustment is required. If WRV fails to open in freeze, check for proper refrigerant pressures. See "VIII.A. Specification and Performance Data." If refrigerant pressures are correct and WRV does not open, adjust or replace as needed. See "IV.C. Water Regulating Valve Adjustment (water-cooled models)."

h) **Freeze Termination Diagnosis:** After 5 min. in freeze, disconnect CB K5 FS connector. 15 sec. later appliance should switch out of the freeze cycle (15 second delay after FS opens before terminating the freeze cycle). If appliance remains in freeze longer than 15 sec. after FS removed, replace CB. If appliance switches with FS removed but would previously not switch out of freeze with FS connected (long freeze - 3 beep alarm), see "II.E. Float Switch Check and Cleaning."

Note: Normal freeze cycle will last 20 to 40 min. depending on model and conditions. Cycle times and pressures should follow performance data provided in this manual. See "VIII.A. Specification and Performance Data."

i) **Short Freeze Cycle Diagnosis**: Confirm water tank fills and overflows during 1 min. fill and harvest cycles. If not, check water supply filters, shut-off valve, WV screen. If water tank empties before 5 min. timer terminates and freeze cycle is short, check that CV is not leaking by (water flowing down the potable drain). If CV is leaking by, remove and clean CV, replace rubber seat and spring if necessary. If water tank is full, see "II.E. Float Switch Check and Cleaning." for erratic FS.

7) **Pump-Out Cycle – LEDs 1, 3, and 2 are on (10/20 second pump-out).** Timing of the first pump-out is determined by S4 dip switch 5 & 6. See the table below.

"G" Control Board Settings			
S4 Dip Switch Setting		Pump-Out Frequency	1st Pump-Out "G" Control Board
No. 5	No. 6		
OFF	OFF	Every cycle	After 2nd freeze cycle
ON	OFF	Every 2 cycles	After 3rd freeze cycle
OFF	ON	Every 5 cycles	After 6th freeze cycle
ON	ON	Every 10 cycles	After 11th freeze cycle

Comp and FMR continue, HGV energizes. If S4 dip switch 3 & 4 are set to 3 off and 4 on, LED 4 turns on and WV and X11 relay energize, energizing X10 relay. ***NOTICE!*** **S4 dip switch 3 & 4 must not be set to 3 off and 4 on. Otherwise, PM will rotate in freeze cycle direction instead of pump-out direction.** FM and LLV de-energize. PM stops for 2 sec., then reverses for 10/20 sec. depending on pump-out timer (S4 dip switch 3 & 4) setting. When the pump-out timer terminates, pump-out is complete. The pump-out frequency control (S4 dip switch 5 & 6) is factory set, and generally no adjustment is required. However, the pump-out frequency control can be set to have a pump-out occur every cycle, or every 2, 5, or 10 cycles. For details, see "III.C.4. Pump-Out Frequency Control (S4 dip switch 5 & 6)."

Pump-Out Diagnosis: In the freeze cycle before pump-out (see table above), after 5 min. of freeze disconnect CB black K5 connector (FS connector). Check that PM stops and re-starts and that PM rotation is correct (water flowing down the drain through CV). If PM does not stop and re-start, check that CB LEDs 1, 3, and 2 are on. If not, replace CB. If LEDs 1, 3, and 2 are on and PM does not energize, check for 115VAC at CB K1 #5 (DBU) to neutral (W). If 115VAC is not present, replace CB. If 115VAC is present, check that X10 relay is de-energized. If not, check X11 relay status. If X11 relay is energized, replace CB. If X11 relay is de-energized and X10 relay is energized, replace X11 relay (contacts sticking). If X10 relay is de-energized, check for 115VAC at terminal #6 (DBU) to neutral (W) and terminal #2 (DBU) to neutral (W). If 115VAC is present on terminal #6 (DBU) and not on terminal #2 (DBU), replace X10 relay. If PM is energized and rotating in pump-out rotation, make sure the drain line is not clogged and that CV is clean and operating properly.

Confirm FM and LLV de-energize. If FM or LLV are energized with LEDs 1, 3, and 2 on, replace CB.

8) **Normal Harvest Cycle** – Same as the initial harvest cycle. Return to step 5a) above.
Note: Appliance continues to cycle until MBC is satisfied or power is switched off. The appliance always restarts at the 1-min. fill cycle.

9) **Shutdown**: **"G" Control Board**

a) **Thermostatic Bin Control (TBC):**
When the appliance is running, hold ice in contact with the thermostatic bulb. TBC switch opens within 10 sec., shutting down the appliance. TBC is factory set, and generally no adjustment is required. However, adjustment may be needed in some conditions, particularly at higher altitude locations.
Diagnosis: See "II.D.1. Thermostatic Bin Control Check." CB red K4 connector must have the jumper in place. When the jumper is in place, the green "BC CLOSED" LED remains on. If the jumper is not in place, yellow "BC OPEN" LED turns on and the icemaker turns off and remains off until the jumper is replaced in its original position.
NOTICE! **CB red K4 connector jumper (4A4883G01) must be in place.**

b) **Mechanical Bin Control (MBC):**
See "II.D.2. Mechanical Bin Control Check."

Legend: **BC**–bin control; **CB**–control board; **Comp**–compressor; **CR**–compressor relay; **CT**–control transformer; **CV**–check valve; **FM**–fan motor; **FMR**–fan motor remote; **FS**–float switch; **HGV**–hot gas valve; **HM**–headmaster (C.P.R.); **HPS**–high-pressure switch; **LLV**–liquid line valve; **MBC**–mechanical bin control; **MC**–magnetic contactor; **PM**–pump motor; **TBC**–thermostatic bin control; **TXV**–thermostatic expansion valve; **WRV**–water regulating valve; **WV**–inlet water valve

C. Control Board Check

Before replacing CB that does not show a visible defect and that you suspect is bad, always conduct the following check procedure. This procedure will help you verify your diagnosis.

Alarm Reset: If CB is in alarm (beeping), press the "ALARM RESET" button on CB while CB is beeping. **WARNING! Risk of electric shock. Care should be taken not to touch live terminals.** Once reset, the icemaker starts at the 1-minute fill cycle. For audible alarm information, see "III.B. LED Lights and Audible Alarm Safeties."

1) Check the dip switch settings to assure that S4 dip switch 3, 4, 7, 8, 9, 10 and S5 dip switch 1 through 5 ("G" CB) are in the factory default position. S4 dip switch 1, 2, 5, 6 are cleaning adjustments and the settings are flexible. For factory default settings, see "III.C.1. Default Dip Switch Settings."

2) Move the control switch to the "ICE" position. If the red "POWER OK" LED is on, control voltage is good, continue to step 3. If the "POWER OK" LED is off, check CT secondary circuit. CT output is 10.5VAC at 115VAC primary input. If the secondary circuit has proper voltage and the red LED is off, replace CB.

   If the secondary circuit does not have proper voltage, check CT primary circuit. Check for 115VAC at CB K1 connector pin #10 (BR) to neutral (W) for 115VAC. Always choose a white (W) neutral wire to establish a good neutral connection when checking voltages. For additional checks, see "II.G.1. No Ice Production."

3) The "OUTPUT TEST" button provides a relay sequence test. Make sure the control switch is in the "ICE" position, then press the "OUTPUT TEST" button. For the correct lighting sequence, see the table below. Note that the order of the LEDs from the outer edge of the control board is 1, 4, 3, 2. Components (e.g., compressor) cycle during the test.

Control Board	Correct LED Lighting Sequence
"E"	2, 3, 4, 1
"G"	1, 4, 3, 2

   Following the test, the icemaker begins operation at the 1-minute fill cycle for both "E" and "G" control boards. If the LEDs do not light as described above, replace CB.

4) To verify voltage output from CB to the components, slide the CB K1 connector out far enough to allow multimeter lead contact. With the icemaker in the cycle to be tested, check output voltage from the corresponding pin on CB K1 connector to a neutral (W wire). If output voltage is not found and the appropriate LED is on, replace CB.

Legend: **CB**–control board; **CT**–control transformer

D. Bin Control Check

1. Thermostatic Bin Control Check

BC shuts down the icemaker within 10 sec. when ice contacts the thermostatic bulb, regardless of the cycle at activation.

NOTICE
When the ambient temperature is below 45°F (7°C), BC opens and shuts down the appliance even if the ice storage bin is empty. When BC is set in the prohibited range, the appliance operates continuously even if the ice storage bin is filled with ice. Setting in the prohibited range may result in severe damage to the appliance.

BC is factory set, and generally no adjustment is required. However, adjustment may be needed in some conditions, particularly at higher altitude locations.

Note: On "G" control boards, a jumper (4A4883G01) must be placed on CB red K4 connector. Otherwise, CB yellow "BC OPEN" LED is on and appliance will not start.

To check BC, follow the steps below.

1) Turn off the power supply.
2) Remove the front panel, then move the control switch to the "OFF" position.
3) Remove the control box cover and base cover, then clear any ice away from BC bulb.
4) Disconnect BC wires from BC switch.
5) Hold your hand around the bulb to warm it up.
6) Check for continuity across BC switch. If closed, continue to step 6. If open, adjust or replace BC.
7) With the multimeter test leads still in place, hold ice on BC bulb to lower the temperature. Within 10 sec., BC switch should open. If it remains closed, adjust or replace BC.

Legend: **BC**–thermostatic bin control

2. Mechanical Bin Control Check

a) Mechanical Bin Control Check

This appliance uses a lever-actuated proximity switch to control the ice level in the storage bin. No adjustment is required.

To check MBC, follow the steps below.

1) Turn off the power supply.
2) Remove the front panel, then move the control switch to the "OFF" position.
3) Remove the control box cover, then clear any ice away from MBC.
4) Check MBC wire harness connections. See Fig. 1.
5) Disconnect MBC connector from CB K4 connector.
6) Check for continuity across the wires of MBC connector. When the actuator paddle is not engaged, MBC switch is closed. If open, check that the wire harness connector is properly connected and that the actuator paddle is not sticking. Clean if necessary. See "II.D.2.b) Mechanical Bin Control Cleaning." If MBC switch still reads open, replace MBC.

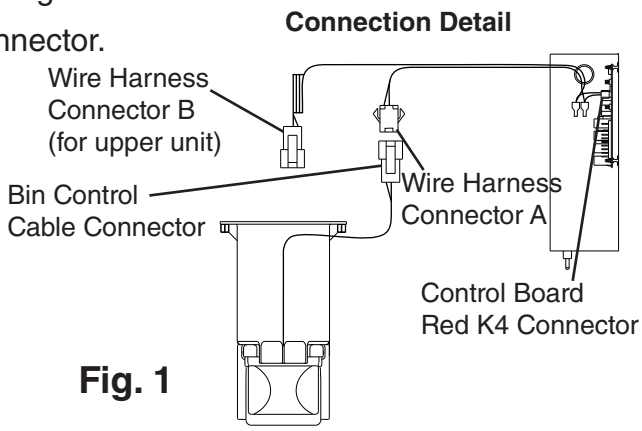


Fig. 1

7) Press and hold the actuator paddle; check for continuity across the wires of MBC connector. When the actuator paddle is engaged, MBC switch is open. If closed, check that the actuator paddle is not restricted. Clean if necessary. See "II.D.2.b) Mechanical Bin Control Cleaning." If MBC switch still reads closed, replace MBC.
8) Reconnect MBC connector to CB K4 connector, then move the control switch to the "ICE" position. Turn on the power supply.
9) Check that CB green "BC CLOSED" LED is on.
10) Allow the icemaker to cycle on. Press and hold the actuator paddle. CB yellow "BC OPEN" LED should turn on and the icemaker should shut down according to the chart below. If it does not, replace CB.

Cycle at Mechanical Bin Control Activation	**Shutdown**
Fill Cycle	15 sec. after activation.
Harvest Cycle	At the end of the harvest cycle, or up to 15 sec. into the freeze cycle if activated at the end of the harvest cycle.
Freeze Cycle	15 sec. after activation if activated at least 15 sec. before the 5-min. short cycle protection timer terminates. Otherwise, at the end of the next harvest cycle.

Legend: **MBC**–mechanical bin control; **CB**–control board

b) Mechanical Bin Control Cleaning

Scale may build up on MBC. Scale can cause the actuator paddle and magnet to stick. In this case, MBC should be cleaned.

⚠ WARNING

CHOKING HAZARD: Ensure all components, fasteners, and thumbscrews are securely in place after the icemaker is serviced. Make sure that none have fallen into the dispense unit/ice storage bin.

1) Turn off the power supply.
2) Remove the front panel, then move the control switch to the "OFF" position.
3) Clear any ice away from MBC.
4) Disconnect MBC connector from CB K4 connector, then remove MBC from the icemaker.
5) Remove the actuator paddle from the switch mount. See Fig. 2.
6) Wipe down MBC with a mixture of 1 part of Hoshizaki "Scale Away" and 25 parts of warm water. Rinse the parts thoroughly with clean water.
7) Reassemble MBC and replace it in its correct position.
   Note: If the magnet was removed for cleaning, be sure to replace it in its correct position.
8) Reconnect MBC connector to CB K4 connector, then move the control switch to the "ICE" position.
9) Replace the control box cover in its correct position.
10) Turn on the power supply to start the automatic icemaking process.
11) Replace the front panel in its correct position.

Legend: **MBC**–mechanical bin control

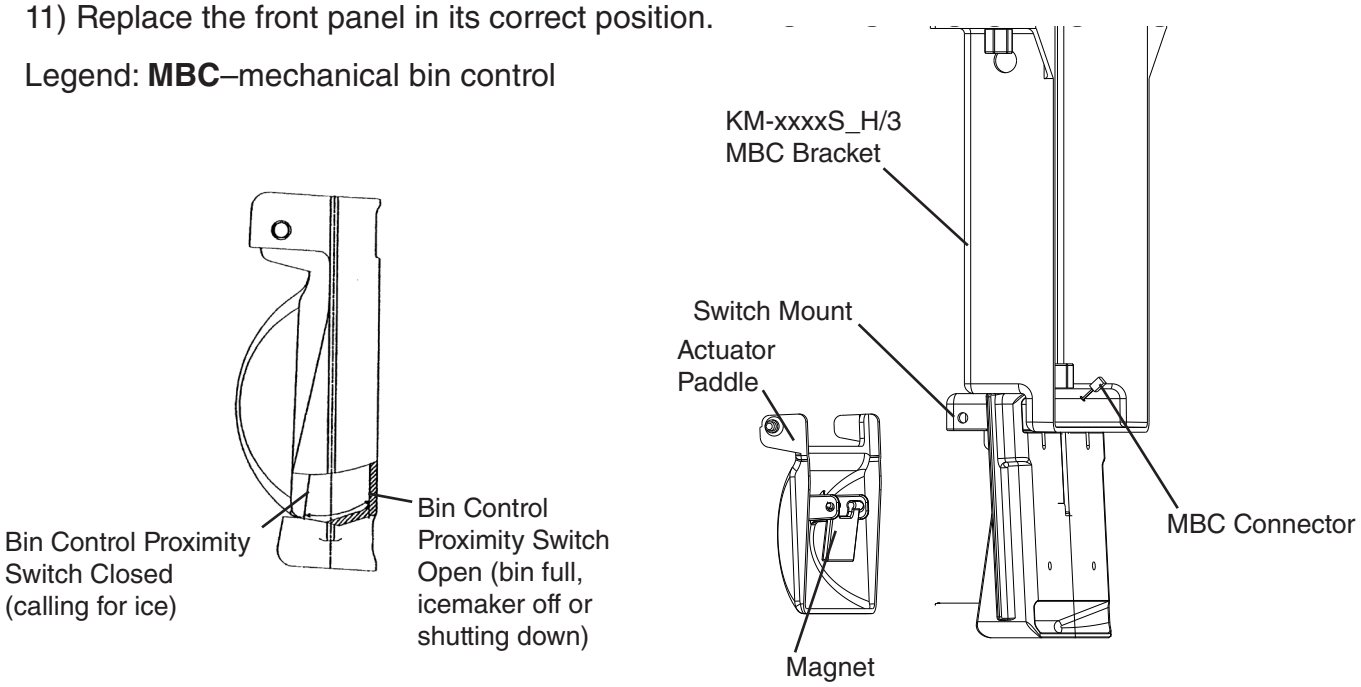


Fig. 2

E. Float Switch Check and Cleaning

FS is used to determine that there is sufficient water in the water tank after the 1-min. fill cycle and after each harvest cycle. FS is also used to determine that the appropriate volume of water has been converted into ice before switching out of the freeze cycle. No adjustment is required.

1. Float Switch Check

To check FS, follow the steps below.

1) Turn off the power supply.

2) Remove the front panel, then move the control switch to the "OFF" position.

3) Remove the insulation panel, then remove the drain plug located on the lower front part of the ice chute. See Fig. 3. Allow the water tank to drain.

4) Replace the drain plug in its correct position. Be careful not to cross thread it.

5) Remove the control box cover.

6) Disconnect FS connector from CB K5 connector.

7) Check for continuity across FS leads. With the water tank empty, FS should be open. If open, continue to step 8. If closed, follow the steps in "II.E.2. Float Switch Cleaning." After cleaning FS, check it again. Replace if necessary.

8) Reconnect FS connector to CB K5 connector, then replace the control box cover in its correct position.

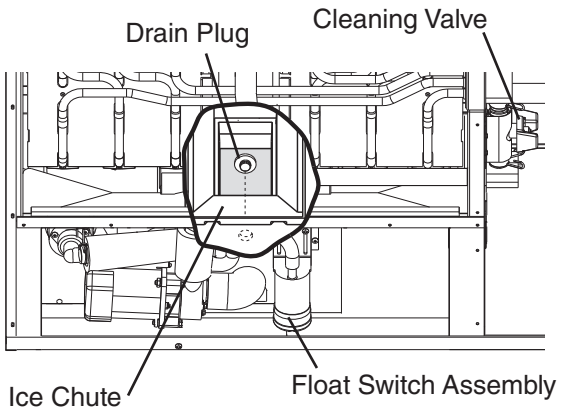


Fig. 3

9) Move the control switch to the "ICE" position. Replace the insulation panel and front panel in their correct positions, then turn on the power supply. After 1 min., the 1-min. fill cycle should end and the initial harvest cycle should begin. If the initial harvest cycle begins, FS is good and the check is complete. If the initial harvest cycle does not begin, continue to step 10.

10) Turn off the power supply.

11) Remove the front panel. Move the control switch to the "OFF" position.

12) Remove the control box cover.

13) Disconnect FS connector from CB K5 connector.

14) Check for continuity across FS leads. With the water tank full, FS should be closed. If FS is closed and the icemaker will not switch from the 1-min. fill cycle to the initial harvest cycle, replace CB.

If FS is open, confirm that the water tank is full. If the water tank is not full, check the water supply, water filters, and inlet water valve. If the water tank is full, follow the steps in "II.E.2. Float Switch Cleaning." After cleaning FS, check it again. Replace if necessary.

Legend: **CB**–control board; **FS**–float switch

2. Float Switch Cleaning

Depending on local water conditions, scale may build up on FS. Scale on the switch can cause the float to stick. In this case, FS should be cleaned.

1) Turn off the power supply.
2) Remove the front panel, then move the control switch to the "OFF" position.
3) Remove the insulation panel, then remove the drain plug located on the lower front part of the ice chute. See Fig. 3. Allow the water tank to drain.
4) Replace the drain plug in its correct position. Be careful not to cross thread it.
5) Disconnect the vent tube and the flush tube from the top of FS, then remove FS assembly and remove the rubber boot from the bottom of FS assembly. See Fig. 4.
6) Remove the retainer rod from the bottom of FS housing, then remove the float. Be careful not to bend the retainer rod excessively when removing it.
7) Wipe down FS housing, shaft, float, and retainer rod with a mixture of 1 part Hoshizaki "Scale Away" and 25 parts warm water. Clean the inside of the rubber boot and hose with cleaning solution. Rinse the parts thoroughly with clean water.
8) Reassemble FS assembly and replace it and the rubber boot in their correct positions. Reconnect the vent tube and the flush tube.
9) Move the control switch to the "ICE" position.
10) Replace the insulation panel and front panel in their correct positions.
11) Turn on the power supply to start the automatic icemaking process.

Legend: **CB**–control board; **FS**–float switch

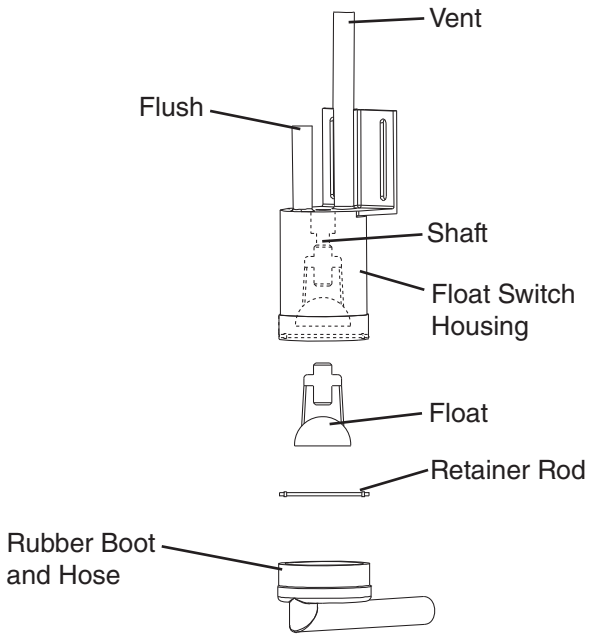


Fig. 4

F. Thermistor Check

To check thermistor resistance, follow the steps below.

1) Turn off the power supply.
2) Remove the front panel. Move the control switch to the "OFF" position.
3) Remove the control box cover.
4) Remove the thermistor from the refrigerant tubing.
5) Immerse the thermistor sensor portion in a glass containing ice and water for 2 or 3 min.
6) Disconnect the thermistor connector from CB K3 connector and check the resistance between thermistor leads. Normal range is 4.7 to 6.2 kΩ. If outside the normal range, replace the thermistor. See "IV.B. Component Service Information." If within the normal range, continue to the next step.
7) Replace the thermistor in its correct position. See "IV.B. Component Service Information."
8) Reconnect the thermistor connector to CB K3 connector.
9) Replace the control box cover in its correct position.
10) Move the control switch to the "ICE" position.
11) Replace the front panel in its correct position.
12) Turn on the power supply.
13) Once the harvest cycle starts (Comp energizes), begin timing the harvest cycle.
14) The harvest timer and harvest cycle should terminate within 2 to 5 min. If the harvest cycle does not terminate within 2 to 5 min., replace CB.

Legend: **CB**–control board; **Comp**–compressor

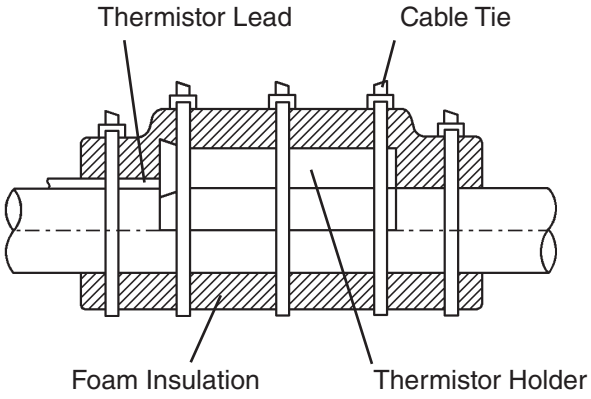


Fig. 5

G. Diagnostic Tables

1. No Ice Production

No Ice Production - Possible Cause	
1. Power Supply	a) Off, blown fuse, or tripped breaker.
	b) Not within specifications.
2. Main Transformer (KM-1301S_H auxiliary code D-1 and later and all 3 phase models)	a) Voltage tap switch not set to proper voltage.
	b) Coil winding open or shorted.
3. Fuse (Control Box)	a) Blown.
4. Thermostatic Bin Control See "II.D. Bin Control Check"	a) Tripped with bin filled with ice.
	b) Ambient temperature too cool.
	c) Set too warm.
	d) Bulb out of position.
	e) Open contacts, defective.
5. Control Switch	a) In "OFF" or "WASH" position.
	b) Bad contacts.
6. High-Pressure Switch	a) Dirty condenser.
	b) Fan motor not operating.
	c) Refrigerant overcharged.
	d) Bad contacts.
	e) Refrigerant lines or components plugged.
7. Control Transformer (115VAC/10.5VAC)	a) Coil winding open or shorted.
8. Control Board See "II.C. Control Board Check"	a) In alarm.
	b) Yellow "BC OPEN" LED on (bin full) ("G" control board).
	c) Defective.
9. Mechanical Bin Control See "II.D. Bin Control Check."	a) Tripped with bin filled with ice.
	b) Actuator does not move freely.
	c) Defective.
10. Water Supply	a) Water supply off or improper water pressure.
	b) External water filters clogged.
11. Inlet Water Valve	a) Screen or orifice clogged.
	b) Coil winding open.
	c) Water valve open in freeze cycle.
12. Float Switch See "II.E. Float Switch Check and Cleaning"	a) Float does not move freely.
	b) Defective.
13. Compressor	a) Compressor relay/magnetic contactor contacts bad or coil winding open.
	b) Start capacitor or run capacitor defective (single phase model).
	c) Internal protector open.
	d) Start relay contacts bad or coil winding open (single phase model).
	e) Compressor defective.
14. Hot Gas Valve	a) Closed in harvest cycle.
	b) Open in freeze cycle.

No Ice Production - Possible Cause	
15. Thermistor See "II.F. Thermistor Check"	a) Loose, disconnected, or defective.
16. Pump Motor	a) Motor winding open.
	b) Bearing worn out or locked rotor.
	c) Defective capacitor.
	d) Mechanical seal worn out.
17. Thermostatic Expansion Valve	a) Bulb loose.
	b) Operating erratically.
18. Liquid Line Valve	a) Closed in freeze cycle.
	b) Open in harvest cycle.
19. Fan Motor	a) Motor winding open.
	b) Bearing worn out or locked rotor.
	c) Defective capacitor.
20. Water System	a) Water leaks causing short freeze time.

2. Freeze-Up

Defrost and clean the icemaker prior to diagnosing freeze-up. Fill out a freeze-up checklist. See the Hoshizaki America Technician's Pocket Guide or contact your local distributor for a copy of the freeze-up checklist.

Freeze-Up - Possible Cause	
Harvest Cycle	
1. Evaporator	a) Scaled up.
	b) Damaged.
2. Cube Guides	a) Out of position.
	b) Damaged.
3. Spray Tubes and/or Spray Guides	a) Dirty.
	b) Out of position.
4. Water Supply	a) Low water pressure.
	b) External water filters clogged.
	c) Insufficient water line size. Minimum 3/8" Nominal ID (10 mm Nominal OD in the EU) copper water tubing or equivalent.
5. Inlet Water Valve	a) Screen or orifice clogged.
	b) Defective.
6. Float Switch See "II.E. Float Switch Check and Cleaning"	a) Dirty, sticking.
	b) Defective.
7. Refrigerant Charge	a) Low.
8. Control Board See "II.C. Control Board Check" and "III.C. Settings and Adjustments"	a) Harvest timer (S4 dip switch 1 & 2) set too short.
	b) Harvest pump timer (S4 dip switch 7) not in factory default position ("G" control board).
	c) Defective.
9. Bin Control See "II.D. Bin Control Check"	a) Thermostatic: Thermostat bulb loose or defective.
	b) Mechanical: Actuator does not move or defective.

Freeze-Up - Possible Cause	
10. Thermistor See "II.F. Thermistor Check"	a) Loose, disconnected, or defective.
11. Thermostatic Expansion Valve	a) Defective.
12. Hot Gas Valve	a) Closed or restricted.
13. Liquid Line Valve	a) Open.
Freeze Cycle	
1. Evaporator	a) Scaled up.
	b) Damaged.
2. Spray Tubes and/or Spray Guides	a) Dirty.
	b) Out of position.
3. Refrigerant Charge	a) Low.
4. Control Board See "II.C. Control Board Check"	a) Freeze timer (S4 dip switch 9 & 10) set incorrectly.
	b) Defective.
5. Inlet Water Valve	a) Leaking by.
6. Float Switch See "II.E. Float Switch Check and Cleaning"	a) Float does not move freely.
	b) Defective.
7. Pump Motor	a) RPM too slow.
	b) Impeller damaged.
8. Thermostatic Expansion Valve	a) Bulb loose or defective.
9. Liquid Line Valve	a) Restricted.
10. Headmaster (C.P.R.) (remote models)	a) Not bypassing.

3. Low Ice Production

Low Ice Production - Possible Cause	
Long Harvest Cycle	
1. Evaporator	a) Scaled up.
2. Spray Tubes and/or Spray Guides	a) Dirty.
	b) Out of position.
3. Refrigerant Charge	a) Low.
4. Water Supply	a) Low water pressure.
	b) External water filters clogged.
	c) Insufficient water line size. Minimum 3/8" Nominal ID (10 mm Nominal OD in the EU) water tubing or equivalent.
	d) Too cold.
5. Control Board See "II.C. Control Board Check"	a) Thermistor connection loose (K3).
	b) Defective.
6. Thermistor See "II.F. Thermistor Check"	a) Loose, disconnected, or defective.
7. Hot Gas Valve	a) Erratic or closed.
8. Inlet Water Valve	a) Screen or orifice clogged.

Low Ice Production - Possible Cause	
9. Compressor	a) Inefficient or off.
10. Liquid Line Valve	a) Erratic or open.
11. Thermostatic Expansion Valve	a) Defective.
Long Freeze Cycle	
1. Evaporator	a) Scaled up, dirty.
2. Float Switch See "II.E. Float Switch Check and Cleaning"	a) Scaled up, dirty.
	b) Float sticking.
	c) Defective switch.
3. Inlet Water Valve	a) Leaking by.
4. Hot Gas Valve	a) Erratic or open.
5. Condenser	a) Clogged.
6. Control Board See "II.C. Control Board Check"	a) Float switch connection loose (K5).
	b) Defective.
7. Refrigerant Charge	a) Low.
8. Thermostatic Expansion Valve	a) Bulb loose.
	b) Defective.
9. Compressor	a) Inefficient or off.
10. Pump Motor	a) RPM too slow.
11. Liquid Line Valve	a) Erratic or restricted.
12. Headmaster (C.P.R.) (remote models)	a) Not bypassing.

III. Controls and Adjustments

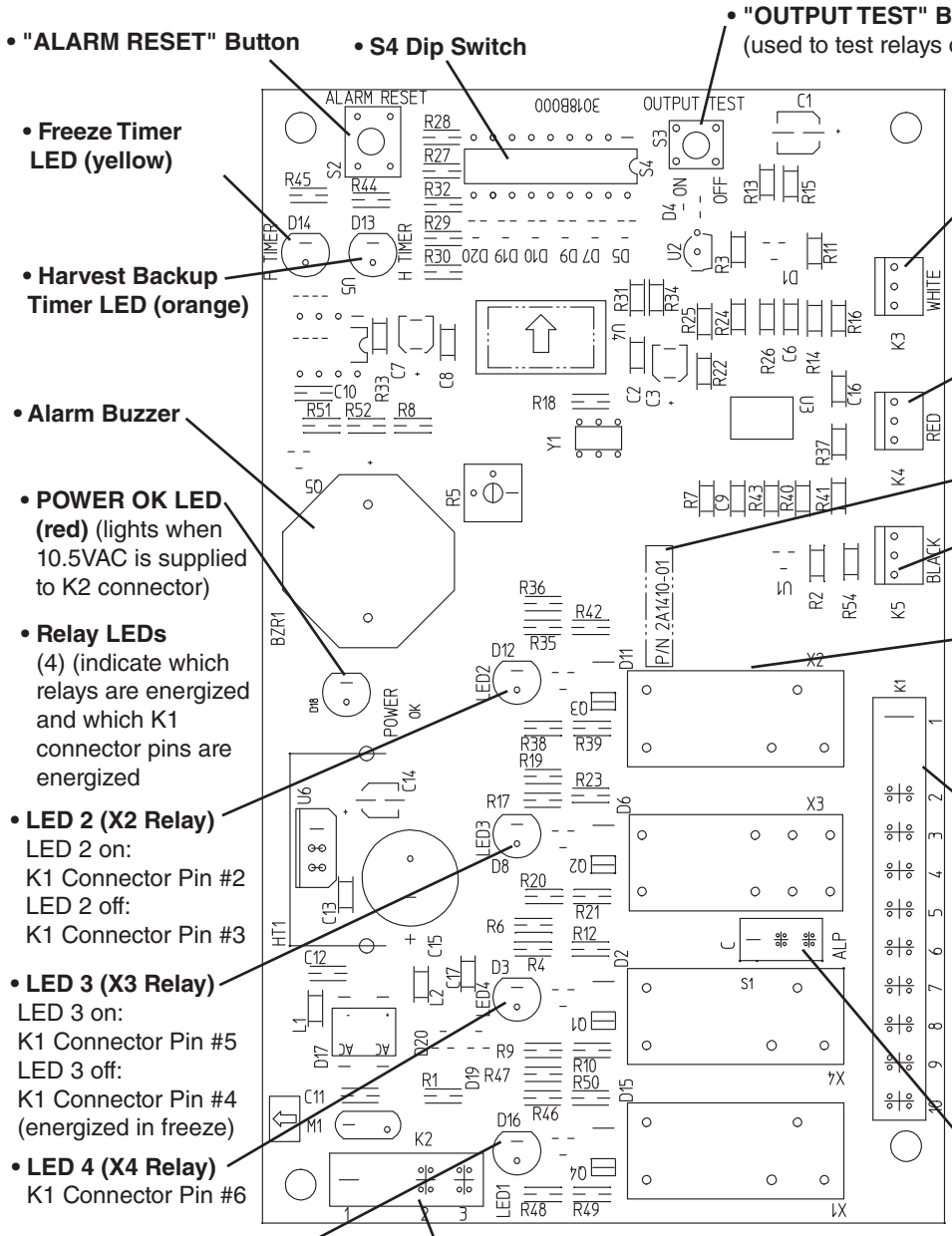
- A Hoshizaki exclusive control board is employed in KM and KMH series appliances.
- All models are pretested and factory adjusted.
- For a control board check procedure, see "II.C. Control Board Check."

NOTICE
• Fragile, handle very carefully. • The control board contains integrated circuits, which are susceptible to failure due to static discharge. It is especially important to touch the metal part of the icemaker when handling or replacing the control board. • Do not touch the electronic devices on the control board or the back of the control board. • Do not change wiring and connections. Do not misconnect K3 WHITE, K4 RED, and K5 BLACK, because the same connector is used for the thermistor, mechanical bin control, and float switch. K4 RED is not used on "E" control board models. • Do not short out power supply to test for voltage. • Always replace the whole control board assembly if it goes bad.

A. Control Board Layout

1. "E" Control Board

"E" Control Board

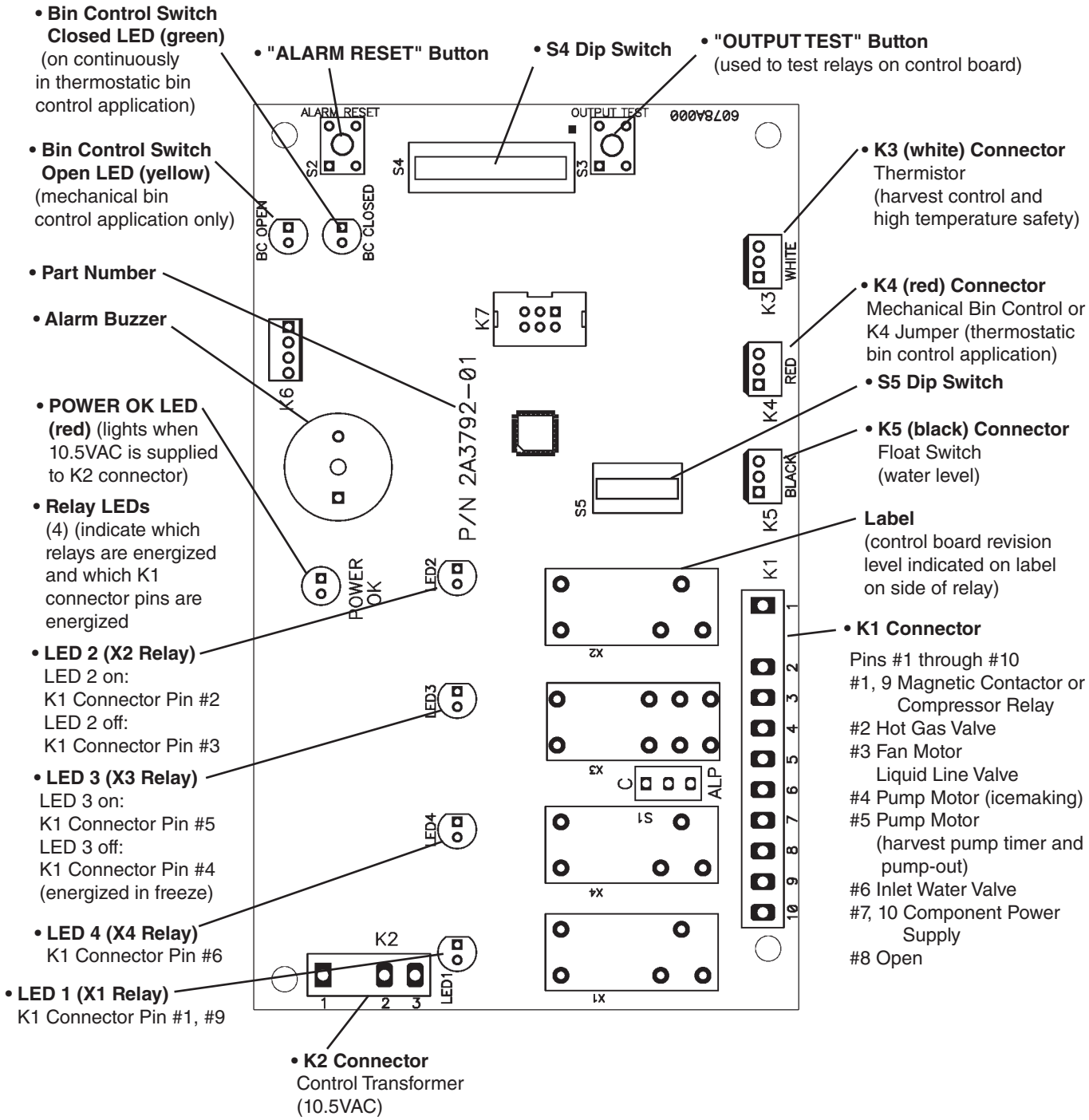


- **"ALARM RESET" Button**
- **S4 Dip Switch**
- **"OUTPUT TEST" Button** (used to test relays on control board)
- **Freeze Timer LED (yellow)**
- **Harvest Backup Timer LED (orange)**
- **K3 (white) Connector** Thermistor (harvest control and high temperature safety)
- **K4 (red) Connector** Open
- **Alarm Buzzer**
- **Part Number**
- **POWER OK LED (red)** (lights when 10.5VAC is supplied to K2 connector)
- **K5 (black) Connector** Float Switch (water level)
- **Relay LEDs** (4) (indicate which relays are energized and which K1 connector pins are energized
- Microprocessor (control board revision level indicated on label on side of relay)
- **LED 2 (X2 Relay)** LED 2 on: K1 Connector Pin #2 LED 2 off: K1 Connector Pin #3
- **K1 Connector** Pins #1 through #10 #1, 9 Magnetic Contactor or Compressor Relay #2 Hot Gas Valve #3 Fan Motor Liquid Line Valve #4 Pump Motor (icemaking) #5 Pump Motor (pump-out) #6 Inlet Water Valve #7, 10 Component Power Supply #8 Open
- **LED 3 (X3 Relay)** LED 3 on: K1 Connector Pin #5 LED 3 off: K1 Connector Pin #4 (energized in freeze)
- **LED 4 (X4 Relay)** K1 Connector Pin #6
- Switch for "C" control board and "ALPINE" control board (service control board only) Set to "ALP" for appliances covered in this manual.
- **LED 1 (X1 Relay)** K1 Connector Pin #1, #9
- **K2 Connector** Control Transformer (10.5VAC)

"E" Control Board	
Part Number	2A1410-02

2. "G" Control Board

"G" Control Board


• Bin Control Switch Closed LED (green) (on continuously in thermostatic bin control application)
• "ALARM RESET" Button
• S4 Dip Switch
• "OUTPUT TEST" Button (used to test relays on control board)
• Bin Control Switch Open LED (yellow) (mechanical bin control application only)
• K3 (white) Connector Thermistor (harvest control and high temperature safety)
• Part Number
• Alarm Buzzer
• K4 (red) Connector Mechanical Bin Control or K4 Jumper (thermostatic bin control application)
• S5 Dip Switch
• K5 (black) Connector Float Switch (water level)
• POWER OK LED (red) (lights when 10.5VAC is supplied to K2 connector)
• Relay LEDs (4) (indicate which relays are energized and which K1 connector pins are energized
Label (control board revision level indicated on label on side of relay)
• LED 2 (X2 Relay) LED 2 on: K1 Connector Pin #2 LED 2 off: K1 Connector Pin #3
• K1 Connector
Pins #1 through #10
#1, 9 Magnetic Contactor or Compressor Relay
#2 Hot Gas Valve
#3 Fan Motor
Liquid Line Valve
#4 Pump Motor (icemaking)
#5 Pump Motor (harvest pump timer and pump-out)
#6 Inlet Water Valve
#7, 10 Component Power Supply
#8 Open
• LED 3 (X3 Relay) LED 3 on: K1 Connector Pin #5 LED 3 off: K1 Connector Pin #4 (energized in freeze)
• LED 4 (X4 Relay) K1 Connector Pin #6
• LED 1 (X1 Relay) K1 Connector Pin #1, #9
• K2 Connector Control Transformer (10.5VAC)
ALARM RESET
OUTPUT TEST
BC OPEN
BC CLOSED
P/N 2A3792-01
POWER OK
LED1
LED2
LED3
LED4
K1
K2
K3
K4
K5
K6
K7
S1
S2
S3
S4
S5
WHITE
RED
BLACK
ALP

"G" Control Board	
Part Number	2A3792-01

B. LED Lights and Audible Alarm Safeties

1. "E" Control Board

At startup, a 5-second delay occurs while the control board conducts an internal timer check. A beep occurs when power is turned off. The red "POWER OK" LED indicates proper control voltage and remains on unless a control voltage problem occurs. The green LEDs 1 through 4 energize and sequence from initial startup as listed in the table below. Note that the order of the LEDs from the outer edge of the control board is 1, 4, 3, 2.

Sequence Step	LED	Energized Components	Time LEDs are On		
			Min.	Max.	Avg.
1-Minute Fill Cycle	4	WV			1 minute
Harvest Cycle	1, 4, 2	Comp, FMR, HGV, WV	2 minutes	20 minutes	3 to 5 minutes
Freeze Cycle	1	Comp, FM/FMR, PM, LLV	5 minutes	freeze timer setting	30 to 35 minutes
Pump-Out Cycle	1, 4*, 3, 2	Comp, FMR, HGV, PM, WV*	10 seconds	20 seconds	*pump-out timer setting

The built in safeties shut down the icemaker and have alarms as listed below.

No. of Beeps (every 3 sec.)	Type of Alarm	Notes
1	High Evaporator Temp. (temperature > 127°F) (53°C)	Check for harvest problem (stuck HGV or relay), hot water entering icemaker, or shorted thermistor.
2	Harvest Backup Timer (harvest > 20 min. for two cycles in a row)	Orange "H TIMER" LED on. Check for open thermistor, HGV not opening, TXV or LLV leaking by, low charge, or inefficient Comp, or WRV leaking by.
3	Freeze Timer (freeze > specified setting for two cycles in a row)	Yellow "F TIMER" LED on. Check for FS stuck closed (up), WV leaking by, HGV leaking by, PM not pumping, TXV not feeding properly, LLV not opening, low charge, HM not bypassing, or inefficient Comp.
To reset the above safeties, press the "ALARM RESET" button with the power supply on.		
6	Low Voltage (92Vac±5% or less)	Red LED turns off if voltage protection operates. The control voltage safeties automatically reset when voltage is corrected.
7	High Voltage (147Vac±5% or more)	

Legend: **Comp**–compressor; **FM**–fan motor; **FMR**–fan motor remote; **FS**–float switch; **HGV**–hot gas valve; **HM**–headmaster (C.P.R.); **LLV**–liquid line valve; **PM**–pump motor; **TXV**–thermostatic expansion valve; **WRV**–water regulating valve; **WV**–inlet water valve

2. "G" Control Board

At startup, a 5-second delay occurs while the control board conducts an internal timer check. A beep occurs when the control switch is moved to the "ICE" position. The red "POWER OK" LED indicates proper control voltage and remains on unless a control voltage problem occurs. The green LEDs 1 through 4 energize and sequence from initial startup as listed in the table below. Note that the order of the LEDs from the outer edge of the control board is 1, 4, 3, 2.

Sequence Step	LED	Energized Components	Time LEDs are On		
			Min.	Max.	Avg.
1-Minute Fill Cycle	4	WV			1 minute
Harvest Cycle	1, 4, 2	Comp, FMR, HGV, WV	2 minutes	20 minutes	3 to 5 minutes
Harvest Pump Timer	1, 3, 2	Comp, FMR, HGV, PM	0 seconds	50 seconds	harvest pump timer setting
Freeze Cycle	1	Comp, FM/FMR, PM, LLV	5 minutes	freeze timer setting	30 to 35 minutes
Pump-Out Cycle	1, 4*, 3, 2	Comp, FMR, HGV, PM, WV*	10 seconds	20 seconds	*pump-out timer setting

The built-in safeties shut down the icemaker and have alarms as listed below.

No. of Beeps (every 3 sec.)	Type of Alarm	Notes
1	High Evaporator Temp. (temperature > 127°F) (53°C)	Check for harvest problem (stuck HGV or relay), hot water entering icemaker, or shorted thermistor.
2	Harvest Backup Timer (harvest > 20 min. for two cycles in a row)	Check for open thermistor, HGV not opening, TXV or LLV leaking by, low charge, or inefficient Comp, or WRV leaking by.
3	Freeze Timer (freeze > freeze timer setting for two cycles in a row)	Check for FS stuck closed (up), WV leaking by, HGV leaking by, PM not pumping, TXV not feeding properly, LLV not opening, low charge, HM not bypassing, or inefficient Comp.
To reset the above safeties, press the "ALARM RESET" button with the power supply on.		
6	Low Voltage (92Vac±5% or less)	Red LED turns off if voltage protection operates. The control voltage safeties automatically reset when voltage is corrected.
7	High Voltage (147Vac±5% or more)	

Legend: **Comp**–compressor; **FM**–fan motor; **FMR**–fan motor remote; **FS**–float switch; **HGV**–hot gas valve; **HM**–headmaster (C.P.R.); **LLV**–liquid line valve; **PM**–pump motor; **TXV**–thermostatic expansion valve; **WRV**–water regulating valve; **WV**–inlet water valve

C. Settings and Adjustments

NOTICE
Dip switches are factory set. Failure to maintain factory settings may adversely affect performance and warranty coverage. For more information, contact your Hoshizaki Service Center.

1. Default Dip Switch Settings

The dip switches are factory-adjusted to the following positions for both the "E" and "G" control boards:

a) "E" and "G" Control Board without Harvest Pump Timer Operation

Model	Auxiliary Code	Water Valve Part Number	Code on Water Valve	S4 Dip Switch No.									
				1	2	3	4	5	6	7	8	9	10
KM-1601SWH/3	All			OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
KM-1601SRH/3	R-0, R-1, some S-1	3U0111-02 (8 l/min)	J248-032	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
	Some S-1	3U0111-01 (15 l/min)	J248-030	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
	S-2 & later	4A1176-04 (11 l/min)											
	V-1 (M) & later	4A5251-04 (11 l/min)											
KM-1900SAH/3 KM-1900SWH/3 KM-2100SWH3 KMH-2000SWH/3 KMH-2000SRH3	All			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
KM-1900SRH/3 KM-2100SRH3	All			ON	OFF	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
KM-2500S_H3	All			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
KMH-2000SRH	All			OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON

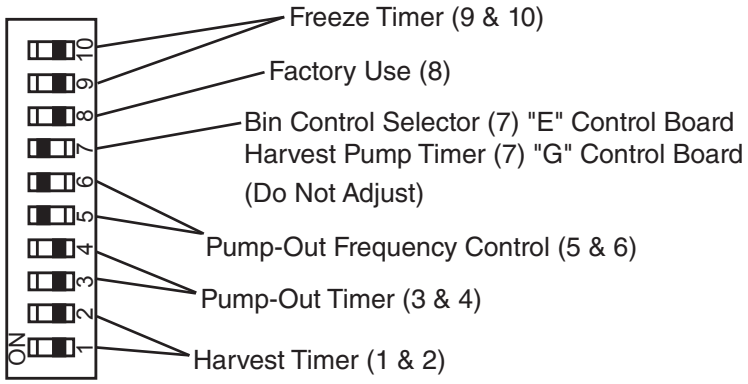
b) "G" Control Board with Harvest Pump Timer Operation

S4 Dip Switch										
S4 Dip Switch No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
KM-1301SAH/3 KM-1301SWH/3 KM-1601SAH/3	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
KM-1301SRH/3	OFF	OFF	ON	ON	ON	ON	ON	OFF	ON	OFF
KM-1400SWH-M KM-1400SWH3-M	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF

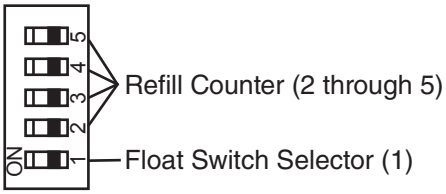
c) "G" Control Board S5 Dip Switch

S5 Dip Switch (Do Not Adjust)						
S5 Dip Switch No.	**1**	**2**	**3**	**4**	**5**
All	OFF	OFF	OFF	OFF	OFF

S4 Dip Switch
"E" and "G" Control Boards



S5 Dip Switch
"G" Control Board



2. Harvest Timer (S4 dip switch 1 & 2)

The harvest timer starts counting when the thermistor reaches 48°F (9°C) at the evaporator outlet and the control board reads 3.9 kΩ from the thermistor. The harvest timer is factory set, and generally no adjustment is required. However, a setting longer than the factory setting may be advised in cases where the drain provided at harvest needs to be prolonged for extra cleaning. Note that the pump-out timer (S4 dip switch 3 & 4) acts in place of the harvest timer during cycles with a pump out. For details, see "III.C.3. Pump-Out Timer (S4 dip switch 3 & 4)."

Note: On models with a pump-out every cycle, the harvest timer is only relevant during the initial harvest cycle since a pump out occurs every cycle thereafter.

S4 Dip Switch Setting		Time (sec.)
No. 1	**No. 2**	
OFF	OFF	60
ON	OFF	90
OFF	ON	120
ON	ON	180

3. Pump-Out Timer (S4 dip switch 3 & 4)

NOTICE
On models with harvest pump timer, do not adjust 3 off and 4 on. Pump does not run in pump-out rotation in this setting.

When a pump-out is called for, the pump motor stops for 2 sec., then energizes in the reverse direction, taking water from the bottom of the water tank and forcing pressure against the check valve seat allowing water to go through the check valve and down the drain. At the same time, water flows through the small tube to power flush the float switch. The pump motor drains the water tank for the time determined by the pump-out timer. The pump-out timer also acts in place of the harvest timer during cycles with a pump-out. The pump-out timer is factory set, and generally no adjustment is required. However, where water quality is bad and the icemaker needs a longer pump-out time, the pump-out timer can be adjusted. The pump-out timer control can be set to pump-out for 10 or 20 sec.

S4 Dip Switch Setting		Time (sec.)		Inlet Water Valve
No. 3	No. 4	T1	T2	
OFF	OFF	10	150	Closed
ON	OFF	10	180	Closed
OFF	ON	10	120	Open
ON	ON	20	180	Closed

T1: Time to drain the water tank
T2: Harvest timer at pump out

4. Pump-Out Frequency Control (S4 dip switch 5 & 6)

The pump-out frequency control is factory set. Generally no adjustment is required. However, where water quality is bad and the icemaker needs a pump-out more often, the pump-out frequency can be adjusted. The pump-out frequency control can be set to have a pump-out occur every cycle, or every 2, 5, or 10 cycles.

Timing of the first pump-out is dependent on the control board. On "E" control boards, the first pump-out is after the first freeze cycle. On "G" control boards, the first pump-out is dependent on S4 dip switch 5 & 6. See the table below.

"E" & "G" Control Board			1st Pump-Out	
S4 Dip Switch Setting		Pump-Out Frequency	"E" Control Board	"G" Control Board
No. 5	No. 6			
OFF	OFF	Every cycle	After 1st freeze cycle	After 2nd freeze cycle
ON	OFF	Every 2 cycles		After 3rd freeze cycle
OFF	ON	Every 5 cycles		After 6th freeze cycle
ON	ON	Every 10 cycles		After 11th freeze cycle

5. Bin Control Selector or Harvest Pump Timer Operation (S4 dip switch 7)

Depending on the control board, S4 dip switch 7 is used for either bin control selection or harvest pump timer operation.

- "E" Control Board: Bin Control Selector (thermostatic or mechanical).
- "G" Control Board: Harvest Pump Timer Operation.

a) Bin Control Selector: "E" Control Board

NOTICE
Do not adjust. This dip switch must be left in the factory default position or the icemaker will not operate correctly.

When set to on position on an icemaker with a thermostatic bin control, a 5-beep alarm sounds (open circuit) and the icemaker does not operate.

"E" Control Board	
S4 Dip Switch Setting	Bin Control
No. 7	
ON	Mechanical (requires resistor wire harness)
OFF	Thermostatic

b) Harvest Pump Timer: "G" Control Board

NOTICE
Factory set for proper operation. Do not adjust. Adjustment outside of the factory default setting may result in damage to the appliance.

Depending on the harvest pump timer setting, the pump motor either stays off or is energized the last 50 seconds of harvest. When the pump motor is energized, water circulates over the evaporator. The harvest water valve is open during harvest for a maximum of 6 minutes or the length of harvest minus 0 or 50 seconds (determined by the harvest pump timer setting), whichever is shorter.
When S4 dip switch 7 is in the on position and harvest begins, X11 and X10 relays energize. A latching circuit is created through the X11 and X10 relays. For further details, see "VIII.C. Wiring Diagrams."
50 sec. before harvest termination, LED 4 turns off, inlet water valve and X11 relay de-energize. X10 relay remains energized through the latching circuit. Next, LED 3 turns on and control board K1 connector pin #5 (DBU wire) energizes, energizing the pump motor for the last 50 sec. of harvest.

"G" Control Board	
S4 Dip Switch Setting No. 7	Pump Motor Time (sec.)
ON	50
OFF	0

6. Factory Use (S4 dip switch 8)

Factory set for proper operation. Do not adjust. This must be left in the factory default position.

7. Freeze Timer (S4 dip switch 9 & 10)

NOTICE
Adjust to proper specification, or the icemaker may not operate correctly.

The freeze timer setting determines the maximum allowed freeze time to prevent possible freeze-up issues. Upon termination of the freeze timer, the control board initiates the harvest cycle or pump-out cycle. After 2 consecutive freeze timer terminations, the control board shuts down the icemaker. In this case, see "II.G.3. Low Ice Production" for possible solutions. The freeze timer is factory set and no adjustment is required. Before changing this setting, contact Hoshizaki Technical Support at 1-800-233-1940 for recommendations.

S4 Dip Switch Setting		Time (min.)
No. 9	No. 10	
OFF	OFF	60
OFF	ON	50
ON	OFF	70
ON	ON	75

8. Float Switch Selector (S5 dip switch 1): "G" Control Board

NOTICE
Do not adjust. This must be left in the factory default position or the icemaker will not operate correctly.

9. Refill Counter (S5 dip switch 2 through 5): "G" Control Board

NOTICE
Do not adjust. These must be left in the factory default position or the icemaker will not operate correctly.

D. Control Switch

The control switch has three positions: "OFF" for power off, "ICE" for icemaking, and "WASH" to energize the pump motor when cleaning and sanitizing.

IV. Refrigeration Circuit and Component Service Information

⚠ WARNING

- This appliance should be diagnosed and repaired only by qualified service personnel to reduce the risk of death, electric shock, serious injury, or fire.
- Move the control switch to the "OFF" position and turn off the power supply. Place the disconnect in the "OFF" position. Lockout/Tagout to prevent the power supply from being turned back on inadvertently.
- **CHOKING HAZARD:** Ensure all components, fasteners, and thumbscrews are securely in place after the icemaker is serviced. Make sure that none have fallen into the dispenser unit/ice storage bin.
- Make sure all food zones in the icemaker and dispenser unit/ice storage bin are clean after service.

A. Refrigeration Circuit Service Information

⚠ WARNING

- Repairs requiring the refrigeration circuit to be opened must be performed by properly trained and EPA-certified service personnel.
- Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). Do not use R-404A as a mixture with pressurized air for leak testing.

NOTICE

- Always recover the refrigerant and store it in an approved container. Do not discharge the refrigerant into the atmosphere.
- Do not leave the system open for longer than 15 min. when replacing or servicing parts. The Polyol Ester (POE) oils used in R-404A applications can absorb moisture quickly. Therefore it is important to prevent moisture from entering the system when replacing or servicing parts.
- Always install a new drier every time the sealed refrigeration system is opened. Do not replace the drier until after all other repair or replacement has been made. Install the new drier with the arrow on the drier in the direction of the refrigerant flow.
- When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

1. Refrigerant Recovery

The icemaker is provided with refrigerant service valves. Using proper refrigerant practices, recover the refrigerant. Store the refrigerant in an approved container. Do not discharge the refrigerant into the atmosphere.

2. Brazing

⚠ WARNING

- R-404A itself is not flammable at atmospheric pressure and temperatures up to 176°F (80°C).
- R-404A itself is not explosive or poisonous. However, when exposed to high temperatures (open flames), R-404A can be decomposed to form hydrofluoric acid and carbonyl fluoride both of which are hazardous.
- Do not use silver alloy or copper alloy containing arsenic.

1) Braze all fittings while purging with nitrogen gas flowing at a pressure of 3 to 4 PSIG.
   Note: Because the pipes in the evaporator case are specially coated to resist corrosion, it is important to make connections outside the evaporator case when possible. If it is necessary to braze inside the evaporator case, use sandpaper to remove the coating from the brazing connections before unbrazing the components.

NOTICE

- Always install a new drier every time the sealed refrigeration system is opened.
- Do not replace the drier until after all other repair or replacement has been made. Install the new drier with the arrow on the drier in the direction of the refrigerant flow.
- When brazing, protect the drier by using a wet cloth to prevent the drier from overheating. Do not allow the drier to exceed 250°F (121°C).

2) Use an electronic leak detector or soap bubbles to check for leaks. Add a trace of refrigerant to the system (if using an electronic leak detector), and then raise the pressure using nitrogen gas (140 PSIG). Do not use R-404A as a mixture with pressurized air for leak testing.

3. Evacuation and Recharge (R-404A)

1) Attach a vacuum pump to the system. Be sure to connect the charging hoses to both high and low-side refrigerant access valves.

IMPORTANT

The vacuum level and vacuum pump may be the same as those for current refrigerants. However, the rubber hose and gauge manifold to be used for evacuation and refrigerant charge should be exclusively for POE oils.

2) Turn on the vacuum pump. Open the gauge manifold valves, then open the high and low-side service valves. Never allow the oil in the vacuum pump to flow backwards.

3) Allow the vacuum pump to pull down to a 29.9" Hg vacuum. Evacuating period depends on pump capacity.

4) Close the low-side valve and high-side valve on the gauge manifold.

5) Disconnect the gauge manifold hose from the vacuum pump and attach it to a refrigerant service cylinder. Remember to loosen the connection and purge the air from the hose. For the required refrigerant charge, see the rating label inside the icemaker. Hoshizaki recommends only virgin refrigerant or reclaimed refrigerant which meets ARI Standard 700 (latest edition) be used.

6) A liquid charge is required when charging an R-404A system (to prevent fractionation). Place the service cylinder on the scales; if the service cylinder is not equipped with a dip tube, invert the service cylinder, then place it on the scales. Open the high-side valve on the gauge manifold.

7) Allow the system to charge with liquid until the proper charge weight is met.

8) If necessary, add any remaining charge to the system through the low-side.
NOTICE! **To prevent compressor damage, use a throttling valve or liquid dispensing device to add the remaining liquid charge through the low-side refrigerant service valve with the icemaker running.**

9) Close the high and low-side service valves, then close the high and low-side gauge manifold valves. Disconnect the gauge manifold hoses.

10) Cap the refrigerant service valves to prevent a possible leak.

B. Component Service Information

NOTICE
When replacing a component listed below, see the notes to help ensure proper operation.

Component	Notes
Compressor	1 phase: Install a new start capacitor, run capacitor, and start relay. 3 phase: Install a new magnetic contactor.
Thermostatic Expansion Valves	• Attach the thermostatic expansion valve bulb to the suction line in the same location as the previous bulb. • The bulb should be between the 10 and 2 o'clock positions on the tube. • Secure the bulb with the clamp and holder, then insulate it.
Hot Gas Valves Liquid Line Valves	• Replace the strainer if applicable. • Use copper tube of the same diameter and length when replacing valve lines.
Fan Motors	Install a new capacitor.
Pump Motor	Install a new capacitor.
Thermistor	• Attach the new thermistor to the suction line in the same location as the previous thermistor. • The thermistor should be at the 12 o'clock position on the tube. • Smoothly fill the recessed area of the thermistor holder with high thermal conductive type sealant. Hoshizaki America part number 4A0683-01 (Silicone Heat Sink Compound 10-8108 manufactured by GC Electronics), KE-4560 RTV (manufactured by ShinEtsu Silicones), or equivalent are recommended. • Secure the thermistor with the holder, then insulate it. • Be very careful to prevent damage to the leads.
KM-1400SWH-M, KM-1400SWH3-M Water Regulating Valve	Tighten the water regulating valve flare nut to a torque of 39.8 ft-lb/53.9 N·m.

C. Water Regulating Valve Adjustment (water-cooled models)

The water regulating valve is factory set, and generally no adjustment is required. However, when necessary, adjust the water regulator using the following procedure.

1) Prepare a thermometer to check the condenser drain temperature. Attach a pressure gauge to the high-side line of the system.
2) 5 min. after a freeze cycle starts, confirm that the thermometer reads 104°F to 115°F (40°C to 46°C). If it does not, rotate the adjustment screw by using a flat blade screwdriver until the temperature is in the proper range (rotate counterclockwise to raise temperature or clockwise to lower temperature). See Fig. 6. Next, check that the reference pressure is in the range indicated in "VIII.A. Specification and Performance Data." If it is not in the proper range, verify the refrigerant charge.
3) Check that the condenser drain temperature is stable.

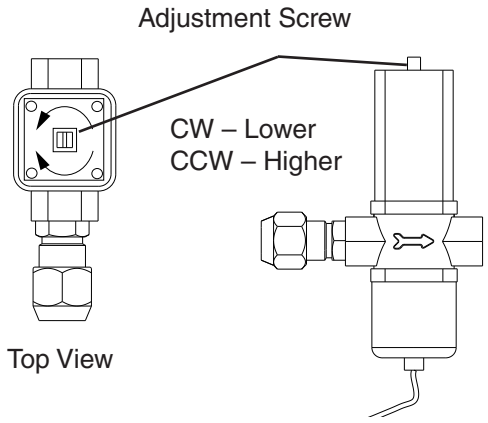


Fig. 6

V. Maintenance

The maintenance schedule below is a guideline. More frequent maintenance may be required depending on water quality, the appliance's environment, and local sanitation regulations

⚠ WARNING

- Only qualified service technicians should service the appliance.
- To reduce the risk of electric shock, do not touch the control switch or service switch with damp hands
- Before servicing: Move the control switch to the "OFF" position and turn off the power supply. Place the disconnect in the "OFF" position. Lockout/Tagout to prevent the power supply from being turned back on inadvertently.
- **CHOKING HAZARD:** Ensure all components, fasteners, and thumbscrews are securely in place after any maintenance is done to the icemaker. Make sure that none have fallen into the dispenser unit/ice storage bin.

Maintenance Schedule		
Frequency	**Area**	**Task**
Daily	Scoop	Clean the ice scoop using a neutral cleaner. Rinse thoroughly after cleaning.
Bi-Weekly	Air Filters	Inspect. Wash with warm water and neutral cleaner if dirty.
Monthly	External Water Filters	Check for proper pressure and change if necessary.
	Icemaker Exterior	Wipe down with a clean, soft cloth. Use a damp cloth containing a neutral cleaner to wipe off oil or dirt build up. Clean any chlorine staining (rust colored spots) using a non-abrasive cleanser.
Yearly	Icemaker and Dispenser Unit/Ice Storage Bin Liner	Clean and sanitize per the cleaning and sanitizing instructions provided in the instruction manual or maintenance label on the icemaker.
	Water Supply Inlet	Close the icemaker water supply line shut-off valve and drain the water system. Clean the water supply inlet screen.
	Condenser	Inspect. Clean if necessary by using a brush or vacuum cleaner. More frequent cleaning may be required depending on location.
	Water Hoses	Inspect the water hoses and clean/replace if necessary.
As Needed	Marine Model Condenser	If contaminated seawater enters the system, flush with clean seawater or fresh water as soon as possible to minimize damage to the condenser.

VI. Preparing the Icemaker for Periods of Non-Use

NOTICE
• When storing the appliance for an extended time or in sub-freezing temperatures, follow the instructions below to prevent damage. • To prevent damage to the water pump, do not operate the appliance with the control switch in the "WASH" position when the water tank is empty.

When the appliance is not used for two or three days under normal conditions, it is sufficient to move the control switch to the "OFF" position. When storing the appliance for an extended time or in sub-freezing temperatures, follow the instructions below.

1. Remove the water from the icemaker water supply line:

1) Turn off the power supply, then remove the front panel.
2) Move the control switch to the "OFF" position.
3) Close the icemaker water supply line shut-off valve, then open the icemaker water supply line drain valve.
4) Allow the line to drain by gravity.
5) Attach a compressed air or carbon dioxide supply to the icemaker water supply line drain valve.
6) Move the control switch to the "ICE" position.
7) Replace the front panel in its correct position, then turn on the power supply.
8) Blow the icemaker water supply line out using the compressed air or carbon dioxide supply.
9) Close the icemaker water supply line drain valve.

2. Drain the water tank:

1) Turn off the power supply, then remove the front panel.
2) Move the control switch to the "OFF" position.
3) Remove the insulation panel. Remove the drain plug located on the lower front part of the ice chute. See Fig. 7. Allow the water tank to drain.
4) Replace the drain plug and the insulation panel in their correct positions. Be careful not to cross thread the drain plug.
5) Remove all ice from the dispenser unit/ice storage bin. Clean the dispenser unit/ice storage bin liner using a neutral cleaner. Rinse thoroughly after cleaning.
6) Replace the front panel in its correct position.

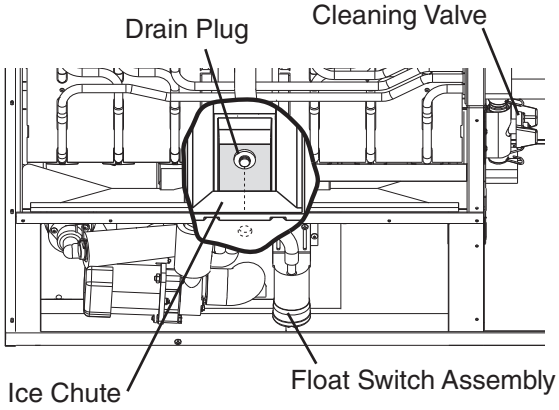


Fig. 7

3. On water-cooled model, remove the water from the water-cooled condenser:

1) Make sure the power supply is off, then remove the front, top, and right side panels.
2) Close the condenser water supply line shut-off valve. If connected to a closed loop system, also close the condenser return line shut-off valve.
3) Open the condenser water supply line drain valve. If connected to a closed loop system, also open the condenser return line drain valve.
4) Attach a compressed air or carbon dioxide supply to the condenser water supply line drain valve.
5) Open the water regulating valve by using a screwdriver to pry up on the spring retainer underneath the spring. While holding the valve open, blow out the condenser using the compressed air or carbon dioxide supply until water stops coming out.
6) Close the drain valve(s).
7) Replace the right side, top, and front panels in their correct positions.

VII. Disposal

The appliance contains refrigerant and must be disposed of in accordance with applicable national, state, and local codes and regulations. Refrigerant must be recovered by properly certified service personnel.

VIII. Technical Information

We reserve the right to make changes in specifications and design without prior notice.

A. Specification and Performance Data

Pressure data is recorded at 5 min. into freezing cycle. The data not in bold should be used for reference only.

1. KM-1301SAH

SPECIFICATION SHEET		
AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral for 115V) or 208-230/60/1	
AMPERAGE	12.4 A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2250 (4.63)	2160 (3.9)
WATER gal./24HR (gal./100 lbs.)	183 (15.7)	605 (45.5)
ICE PRODUCTION PER CYCLE	29.8 lbs. (13.5 kg) 1440pcs.	
REFRIGERANT CHARGE	R404A, 3 lb. 15.5 oz. (1800g)	

PERFORMANCE DATA

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1329**	603	1281	581	1188	539
	80/27	1292	586	1217	552	1109	503
	90/32	1281	581	**1164**	528	1060	481
lbs./day kg./day	100/38	1253	568	1140	517	965	438
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2160**		2166		2222	
	80/27	2164		2174		2257	
	90/32	2166		**2180**		2253	
watts	100/38	2193		2197		2320	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**605**	2.29	481	1.82	429	1.62
	80/27	510	1.93	318	1.21	331	1.25
	90/32	481	1.82	**183**	0.69	167	0.63
gal./day m3/day	100/38	345	1.30	179	0.68	152	0.58
FREEZING CYCLE TIME	70/21	**31**		32		35	
	80/27	32		34		37	
	90/32	32		**35**		38	
min.	100/38	33		36		41	
HARVEST CYCLE TIME	70/21	**4.7**		3.9		3.7	
	80/27	4.1		2.9		3.1	
	90/32	3.9		**2.1**		2.1	
min.	100/38	3.1		2.1		2.1	
HEAD PRESSURE	70/21	**255**	17.9	273	19.2	298	20.9
	80/27	269	18.9	297	20.9	321	22.6
	90/32	273	19.2	**317**	22.3	342	24.0
PSIG kg/cm2G	100/38	278	19.5	323	22.7	365	25.7
SUCTION PRESSURE	70/21	**50**	3.5	50	3.5	53	3.8
	80/27	50	3.5	50	3.5	55	3.9
	90/32	50	3.5	**50**	3.5	55	3.8
PSIG kg/cm2G	100/38	52	3.6	51	3.6	59	4.1

TOTAL HEAT OF REJECTION FROM CONDENSER 20,300 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]

2. KM-1301SAH3

SPECIFICATION SHEET		
AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	9.5 A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2220(4.6)	2090(3.9)
WATER gal./24HR (gal./100 lbs.)	181(15.6)	511(39.4)
ICE PRODUCTION PER CYCLE	30.4 lbs. (13.8 kg) 1440pcs.	
REFRIGERANT CHARGE	R404A, 3 lb. 15.5 oz. (1800g)	

PERFORMANCE DATA

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1298**	589	1257	570	1162	527
	80/27	1267	575	1204	546	1086	493
	90/32	1257	570	**1159**	526	1049	476
lbs./day kg./day	100/38	1225	556	1133	514	947	430
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2090**		2128		2152	
	80/27	2119		2178		2187	
	90/32	2128		**2220**		2236	
watts	100/38	2123		2224		2250	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**511**	1.94	415	1.57	367	1.39
	80/27	438	1.66	287	1.09	286	1.08
	90/32	415	1.57	**181**	0.68	159	0.60
gal./day m3/day	100/38	305	1.15	176	0.67	139	0.53
FREEZING CYCLE TIME	70/21	**32**		33		36	
	80/27	33		35		39	
	90/32	33		**36**		40	
min.	100/38	34		37		43	
HARVEST CYCLE TIME	70/21	**4.2**		3.6		3.4	
	80/27	3.8		2.8		2.9	
	90/32	3.6		**2.1**		2.1	
min.	100/38	2.9		2.1		2.1	
HEAD PRESSURE	70/21	**254**	17.9	272	19.1	296	20.8
	80/27	268	18.8	295	20.8	319	22.4
	90/32	272	19.1	**315**	22.1	339	23.8
PSIG kg/cm2G	100/38	276	19.4	321	22.5	361	25.4
SUCTION PRESSURE	70/21	**48**	3.4	49	3.4	52	3.6
	80/27	49	3.4	50	3.5	54	3.8
	90/32	49	3.4	**51**	3.6	55	3.8
PSIG kg/cm2G	100/38	50	3.5	52	3.6	58	4.1

TOTAL HEAT OF REJECTION FROM CONDENSER	20,200 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]

3. KM-1301SWH

SPECIFICATION SHEET		
AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral for 115V) or 208-230/60/1	
AMPERAGE	8.2 A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	1760(3.2)	1740(3.2)
WATER gal./24HR (gal./100 lbs.)	257(19.4)	546(41.4)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	1561(118)	861(65)
ICE PRODUCTION PER CYCLE	31 lbs. (14.1 kg) 1440pcs.	
REFRIGERANT CHARGE	R404A, 2 lb. 8.2 oz. (1140g)	

PERFORMANCE DATA

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1318**	598	1319	599	1249	567
	80/27	1319	598	1321	599	1211	549
	90/32	1319	599	**1323**	600	1228	557
lbs./day kg./day	100/38	1281	581	1301	590	1141	518
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**1740**		1746		1767	
	80/27	1744		1754		1782	
	90/32	1746		**1760**		1786	
watts	100/38	1755		1766		1810	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**1407**	5.33	1527	5.78	2049	7.76
	80/27	1499	5.67	1686	6.38	2406	9.11
	90/32	1527	5.78	**1818**	6.88	2465	9.33
gal./day m3/day	100/38	1861	7.04	1969	7.46	3060	11.58
FREEZING CYCLE TIME	70/21	**31**		31		33	
	80/27	31		32		34	
	90/32	31		**32**		34	
min.	100/38	32		33		36	
HARVEST CYCLE TIME	70/21	**4.5**		3.9		3.5	
	80/27	4.0		3.1		3.0	
	90/32	3.9		**2.4**		2.2	
min.	100/38	3.2		2.4		2.1	
HEAD PRESSURE	70/21	**235**	16.5	236	16.6	246	17.3
	80/27	236	16.6	237	16.7	253	17.8
	90/32	236	16.6	**238**	16.7	252	17.7
PSIG kg/cm2G	100/38	241	16.9	241	17.0	264	18.6
SUCTION PRESSURE	70/21	**50**	3.5	50	3.5	52	3.6
	80/27	50	3.5	49	3.5	52	3.7
	90/32	50	3.5	**49**	3.4	52	3.6
PSIG kg/cm2G	100/38	51	3.6	50	3.5	54	3.8

TOTAL HEAT OF REJECTION FROM CONDENSER	17,600 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	2,300 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	120 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

4. KM-1301SWH3

SPECIFICATION SHEET		
AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	6.1 A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	1840(3.4)	1770(3.2)
WATER gal./24HR (gal./100 lbs.)	248(19.1)	557(41.8)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	1547(119)	857(64)
ICE PRODUCTION PER CYCLE	32.2 lbs. (14.6 kg) 1440pcs.	
REFRIGERANT CHARGE	R404A, 2 lb. 8.2 oz. (1140g)	

PERFORMANCE DATA

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1333**	605	1323	600	1246	565
	80/27	1326	601	1311	594	1198	544
	90/32	1323	600	**1300**	590	1201	545
lbs./day kg./day	100/38	1286	584	1277	579	1110	503
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**1770**		1791		1805	
	80/27	1786		1818		1824	
	90/32	1791		**1840**		1850	
watts	100/38	1789		1842		1860	
APPROXIMATE WATER	70/21	**1414**	5.35	1526	5.78	2036	7.71
	80/27	1499	5.68	1673	6.33	2382	9.02
	90/32	1526	5.78	**1795**	6.80	2431	9.20
gal./day m3/day	100/38	1846	6.99	1944	7.36	3015	11.41
FREEZING CYCLE TIME	70/21	**30**		31		32	
	80/27	31		32		33	
	90/32	31		**32**		34	
min.	100/38	31		33		35	
HARVEST CYCLE TIME	70/21	**4.5**		3.8		3.5	
	80/27	4.0		3.0		3.0	
	90/32	3.8		**2.4**		2.2	
min.	100/38	3.1		2.3		2.1	
HEAD PRESSURE	70/21	**237**	16.7	238	16.7	249	17.5
	80/27	238	16.7	239	16.8	256	18.0
	90/32	238	16.7	**240**	16.9	255	17.9
PSIG kg/cm2G	100/38	244	17.1	244	17.1	269	18.9
SUCTION PRESSURE	70/21	**50**	3.5	50	3.5	52	3.7
	80/27	50	3.5	49	3.5	53	3.7
	90/32	50	3.5	**49**	3.4	52	3.7
PSIG kg/cm2G	100/38	51	3.6	50	3.5	55	3.9

TOTAL HEAT OF REJECTION FROM CONDENSER	17,400 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	2,300 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	119 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

5. KM-1301SRH with URC-14F

SPECIFICATION SHEET		
AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral for 115V) or 208-230/60/1	
AMPERAGE	13.5A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2090(4.1)	2010(3.6)
WATER gal./24HR (gal./100 lbs.)	203(16.6)	479(35.4)
ICE PRODUCTION PER CYCLE	31.1 lbs. (14.1 kg) 1440pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 10 lbs. 5.8 oz. (4700g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 5 lbs. 15.2 oz. Cond. Unit 4 lbs. 6.5 oz.)	

PERFORMANCE DATA

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1353**	614	1315	596	1219	553
	80/27	1324	600	1264	573	1144	519
	90/32	1315	596	**1222**	554	1110	504
lbs./day kg./day	100/38	1281	581	1196	542	1008	457
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2010**		2033		2088	
	80/27	2028		2064		2131	
	90/32	2033		**2090**		2153	
watts	100/38	2052		2105		2210	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**479**	1.81	398	1.51	350	1.32
	80/27	417	1.58	292	1.10	278	1.05
	90/32	398	1.51	**203**	0.77	173	0.66
gal./day m3/day	100/38	303	1.15	196	0.74	146	0.55
FREEZING CYCLE TIME	70/21	**31**		32		34	
	80/27	32		33		36	
	90/32	32		**35**		37	
min.	100/38	33		35		40	
HARVEST CYCLE TIME	70/21	**4.1**		3.6		3.3	
	80/27	3.7		2.9		2.9	
	90/32	3.6		**2.3**		2.2	
min.	100/38	3.0		2.3		2.1	
HEAD PRESSURE	70/21	**211**	14.8	226	15.9	246	17.3
	80/27	222	15.6	246	17.3	265	18.7
	90/32	226	15.9	**262**	18.4	282	19.9
PSIG kg/cm2G	100/38	230	16.2	267	18.8	301	21.2
SUCTION PRESSURE	70/21	**50**	3.5	51	3.6	53	3.8
	80/27	50	3.5	51	3.6	55	3.9
	90/32	51	3.6	**52**	3.7	56	3.9
PSIG kg/cm2G	100/38	52	3.6	53	3.7	59	4.1

TOTAL HEAT OF REJECTION FROM CONDENSER	17,600 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	2,500 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	133 CU. IN (URC-14F)

6. KM-1301SRH3 with URC-14F

SPECIFICATION SHEET		
AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	10.7A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2140(4.3)	2090(3.8)
WATER gal./24HR (gal./100 lbs.)	192(16.0)	463(34.6)
ICE PRODUCTION PER CYCLE	30.7 lbs. (13.9 kg) 1440pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 10 lbs. 5.8 oz. (4700g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 5 lbs. 15.2 oz. Cond. Unit 4 lbs. 6.5 oz.)	

PERFORMANCE DATA

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1339**	607	1297	589	1203	546
	80/27	1307	593	1243	564	1127	511
	90/32	1297	589	**1197**	543	1088	494
lbs./day kg./day	100/38	1266	574	1171	531	988	448
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2090**		2105		2160	
	80/27	2101		2124		2199	
	90/32	2105		**2140**		2208	
watts	100/38	2128		2156		2270	
APPROXIMATE WATER	70/21	**463**	1.75	384	1.45	338	1.28
	80/27	403	1.52	279	1.06	269	1.02
	90/32	384	1.45	**192**	0.72	165	0.63
gal./day m3/day	100/38	291	1.10	185	0.70	141	0.53
FREEZING CYCLE TIME	70/21	**31**		32		35	
	80/27	32		34		37	
	90/32	32		**35**		39	
min.	100/38	33		36		42	
HARVEST CYCLE TIME	70/21	**3.9**		3.4		3.2	
	80/27	3.5		2.8		2.8	
	90/32	3.4		**2.2**		2.1	
min.	100/38	2.9		2.2		2.1	
HEAD PRESSURE	70/21	**214**	15.0	228	16.0	252	17.7
	80/27	224	15.8	246	17.3	273	19.2
	90/32	228	16.0	**261**	18.4	287	20.2
PSIG kg/cm2G	100/38	234	16.5	267	18.8	311	21.9
SUCTION PRESSURE	70/21	**50**	3.5	51	3.6	54	3.8
	80/27	50	3.5	51	3.6	56	3.9
	90/32	51	3.6	**52**	3.7	56	3.9
PSIG kg/cm2G	100/38	52	3.7	53	3.7	60	4.2

TOTAL HEAT OF REJECTION FROM CONDENSER	17,500 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	2,400 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	133 CU. IN (URC-14F)

7. KM-1400SWH-M

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (2 Wire)	
AMPERAGE	9.7 A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	15 A	
MAXIMUM FUSE SIZE	15 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	1820(3.4)	1800(3.2)
POTABLE WATER gal./24HR (gal./100 lbs.)	244(18.9)	462(33.7)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	2078(161)	1108(81)
ICE PRODUCTION PER CYCL	32.5 lbs. (14.7 kg)	1440pcs.
REFRIGERANT CHARGE	R404A, 2 lb. 2.4 oz. (975g)	

PERFORMANCE SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1370**	621	1347	611	1252	568
	80/27	1353	614	1318	598	1186	538
	90/32	1347	611	**1293**	587	1175	533
lbs./day kg./day	100/38	1307	593	1265	574	1066	484
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**1800**		1806		1843	
	80/27	1804		1814		1866	
	90/32	1806		**1820**		1867	
watts	100/38	1823		1831		1910	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**1570**	5.94	1790	6.78	2334	8.84
	80/27	1738	6.58	2080	7.88	2759	10.44
	90/32	1790	6.78	**2322**	8.79	2955	11.19
gal./day m^3/day	100/38	2226	8.42	2471	9.35	3537	13.39
FREEZING CYCLE TIME	70/21	**30**		31		33	
	80/27	31		32		35	
	90/32	31		**33**		36	
min.	100/38	32		34		39	
HARVEST CYCLE TIME	70/21	**3.9**		3.6		3.5	
	80/27	3.7		3.2		3.3	
	90/32	3.6		**2.8**		2.9	
min.	100/38	3.3		2.8		2.9	
HEAD PRESSURE	70/21	**220**	15.5	229	16.1	249	17.5
	80/27	227	15.9	240	16.9	265	18.7
	90/32	229	16.1	**250**	17.6	273	19.2
PSIG kg/cm^2G	100/38	236	16.6	255	18.0	295	20.7
SUCTION PRESSURE	70/21	**50**	3.5	51	3.6	55	3.9
	80/27	51	3.6	53	3.8	58	4.1
	90/32	51	3.6	**55**	3.9	59	4.2
PSIG kg/cm^2G	100/38	53	3.7	56	3.9	63	4.4

TOTAL HEAT OF REJECTION FROM CONDENSER	22,800 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	2,500 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	138 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

8. KM-1400SWH3-M

SPECIFICATION SHEET		
AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	7.1 A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	15 A	
MAXIMUM FUSE SIZE	15 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	1720(3.3)	1700(3.0)
POTABLE WATER gal./24HR (gal./100 lbs.)	225(17.9)	449(33.4)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	1829(146)	1030(77)
ICE PRODUCTION PER CYC 31.9 lbs. (14.5 kg)	1440pcs.	
REFRIGERANT CHARGE	R404A, 2 lb. 2.4 oz. (975g)	

PERFORMANCE SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1343**	609	1317	597	1211	549
	80/27	1323	600	1283	582	1138	516
	90/32	1317	597	**1255**	569	1124	510
lbs./day kg./day	100/38	1272	577	1224	555	1003	455
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**1700**		1706		1751	
	80/27	1704		1714		1779	
	90/32	1706		**1720**		1777	
watts	100/38	1727		1733		1830	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**1479**	5.60	1647	6.23	2242	8.49
	80/27	1607	6.08	1869	7.07	2665	10.09
	90/32	1647	6.23	**2054**	7.78	2777	10.51
gal./day m^3/day	100/38	2056	7.78	2223	8.41	3442	13.03
FREEZING CYCLE TIME	70/21	**31**		32		35	
	80/27	32		33		37	
	90/32	32		**34**		37	
min.	100/38	33		35		40	
HARVEST CYCLE TIME	70/21	**4.5**		4.0		3.9	
	80/27	4.1		3.4		3.5	
	90/32	4.0		**2.8**		2.8	
min.	100/38	3.5		2.8		2.8	
HEAD PRESSURE	70/21	**230**	16.2	234	16.5	255	17.9
	80/27	233	16.4	240	16.9	269	18.9
	90/32	234	16.5	**245**	17.2	271	19.1
PSIG kg/cm^2G	100/38	244	17.1	251	17.7	295	20.7
SUCTION PRESSURE	70/21	**48**	3.4	49	3.5	54	3.8
	80/27	49	3.5	51	3.6	57	4.0
	90/32	49	3.5	**53**	3.7	58	4.1
PSIG kg/cm^2G	100/38	51	3.6	54	3.8	63	4.4

TOTAL HEAT OF REJECTION FROM CONDENSER	23,500 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	2,500 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	136 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

9. KM-1601SAH

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral for 115V)	
AMPERAGE	15.0 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2630(4.70)	2450(4.03)
WATER gal./24HR (gal./100 lbs.)	228(17.0)	709(48.5)
ICE PRODUCTION PER CYCLE	31.4 lbs. (14.3 kg) 1440pcs.	
REFRIGERANT CHARGE	R404A, 3 lb. 12.5 oz. (1715g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1462**	663	1427	647	1307	593
	80/27	1435	651	1381	627	1221	554
	90/32	1427	647	**1343**	609	1198	543
lbs./day kg./day	100/38	1379	625	1309	594	1064	483
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2450**		2503		2563	
	80/27	2490		2572		2625	
	90/32	2503		**2630**		2687	
watts	100/38	2511		2643		2740	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**709**	2.68	568	2.15	505	1.91
	80/27	602	2.28	383	1.45	392	1.49
	90/32	568	2.15	**228**	0.86	206	0.78
gal./day m3/day	100/38	411	1.56	223	0.84	185	0.70
FREEZING CYCLE TIME	70/21	**29**		30		33	
	80/27	30		31		35	
	90/32	30		**33**		36	
min.	100/38	31		33		39	
HARVEST CYCLE TIME	70/21	**4.6**		3.9		3.6	
	80/27	4.0		2.9		3.1	
	90/32	3.9		**2.1**		2.1	
min.	100/38	3.1		2.1		2.1	
HEAD PRESSURE	70/21	**273**	19.2	287	20.2	312	21.9
	80/27	283	19.9	305	21.4	333	23.4
	90/32	287	20.2	**320**	22.5	348	24.4
PSIG kg/cm2G	100/38	294	20.7	326	23.0	373	26.2
SUCTION PRESSURE	70/21	**41**	2.9	41	2.9	46	3.2
	80/27	41	2.9	42	2.9	49	3.4
	90/32	41	2.9	**42**	3.0	48	3.4
PSIG kg/cm2G	100/38	44	3.1	43	3.1	54	3.8

TOTAL HEAT OF REJECTION FROM CONDENSER 20,700 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]

10. KM-1601SAH3

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	12.0 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2610(4.65)	2370(3.91)
WATER gal./24HR (gal./100 lbs.)	249(18.5)	708(48.6)
ICE PRODUCTION PER CYCLE	32.5 lbs. (14.8 kg) 1440pcs.	
REFRIGERANT CHARGE	R404A, 3 lb. 12.5 oz. (1715g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1456**	660	1423	646	1313	596
	80/27	1431	649	1381	626	1234	560
	90/32	1423	646	**1345**	610	1211	549
lbs./day kg./day	100/38	1379	626	1314	596	1088	494
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2370**		2440		2463	
	80/27	2424		2533		2515	
	90/32	2440		**2610**		2610	
watts	100/38	2420		2610		2610	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**708**	2.68	573	2.17	510	1.93
	80/27	605	2.29	396	1.50	400	1.51
	90/32	573	2.17	**249**	0.94	222	0.84
gal./day m3/day	100/38	422	1.60	243	0.92	198	0.75
FREEZING CYCLE TIME	70/21	**28**		30		33	
	80/27	30		32		35	
	90/32	30		**33**		37	
min.	100/38	31		34		39	
HARVEST CYCLE TIME	70/21	**4.8**		4.1		3.8	
	80/27	4.2		3.1		3.2	
	90/32	4.1		**2.4**		2.3	
min.	100/38	3.3		2.4		2.2	
HEAD PRESSURE	70/21	**267**	18.8	291	20.5	316	22.2
	80/27	286	20.1	323	22.7	343	24.1
	90/32	291	20.5	**350**	24.6	372	26.1
PSIG kg/cm2G	100/38	293	20.6	355	25.0	392	27.6
SUCTION PRESSURE	70/21	**41**	2.9	45	3.1	48	3.4
	80/27	44	3.1	49	3.5	52	3.7
	90/32	45	3.1	**53**	3.7	57	4.0
PSIG kg/cm2G	100/38	45	3.2	54	3.8	60	4.2

TOTAL HEAT OF REJECTION FROM CONDENSER 24,400 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]

11. KM-1601SWH

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral for 115V)	
AMPERAGE	13.4 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2410(3.8)	2300(3.7)
WATER gal./24HR (gal./100 lbs.)	373(24.5)	698(46.8)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	1493(98)	930(62)
ICE PRODUCTION PER CYCLE	30.2 lbs. (13.7 kg) 1440 pcs.	
REFRIGERANT CHARGE	R-404A, 3 lbs. 1 oz. (1400g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1492**	677	1501	681	1419	643
	80/27	1499	680	1513	686	1378	625
	90/32	1501	681	**1523**	691	1408	639
lbs./day kg./day	100/38	1453	659	1496	679	1303	591
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2300**		2332		2335	
	80/27	2325		2375		2354	
	90/32	2332		**2410**		2400	
watts	100/38	2319		2408		2390	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**1628**	6.16	1697	6.43	2042	7.73
	80/27	1681	6.36	1789	6.77	2272	8.60
	90/32	1697	6.43	**1866**	7.06	2297	8.70
gal./day m3/day	100/38	1908	7.22	1967	7.44	2693	10.20
FREEZING CYCLE TIME	70/21	**25**		25		27	
	80/27	25		26		28	
	90/32	25		**27**		29	
min.	100/38	26		27		30	
HARVEST CYCLE TIME	70/21	**5.0**		4.2		3.8	
	80/27	4.4		3.3		3.2	
	90/32	4.2		**2.5**		2.2	
min.	100/38	3.4		2.4		2.0	
HEAD PRESSURE	70/21	**241**	16.9	246	17.3	257	18.0
	80/27	244	17.2	252	17.7	265	18.6
	90/32	246	17.3	**257**	18.0	269	18.9
PSIG kg/cm2G	100/38	249	17.5	260	18.3	281	19.8
SUCTION PRESSURE	70/21	**43**	3.0	44	3.1	45	3.2
	80/27	43	3.1	44	3.1	47	3.3
	90/32	44	3.1	**44**	3.1	47	3.3
PSIG kg/cm2G	100/38	44	3.1	45	3.2	49	3.4

TOTAL HEAT OF REJECTION FROM CONDENSER	23,100 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,300 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	101 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

12. KM-1601SWH3

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	9.0 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2390(3.66)	2270(3.5)
WATER gal./24HR (gal./100 lbs.)	372(23.8)	804(51.7)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	1565(100)	910(59)
ICE PRODUCTION PER CYCLE	30.2 lbs. (13.7 kg) 1440 pcs.	
REFRIGERANT CHARGE	R-404A, 3 lbs. 1 oz. (1400g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1555**	705	1558	707	1466	665
	80/27	1557	706	1562	708	1417	643
	90/32	1558	707	**1565**	710	1440	653
lbs./day kg./day	100/38	1507	684	1536	697	1326	601
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2270**		2305		2332	
	80/27	2297		2351		2367	
	90/32	2305		**2390**		2411	
watts	100/38	2303		2395		2430	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**1714**	6.49	1779	6.73	2186	8.28
	80/27	1764	6.68	1866	7.06	2449	9.27
	90/32	1779	6.73	**1937**	7.33	2455	9.29
gal./day m3/day	100/38	2013	7.62	2059	7.79	2930	11.09
FREEZING CYCLE TIME	70/21	**24**		24		26	
	80/27	24		25		27	
	90/32	24		**26**		28	
min.	100/38	25		26		30	
HARVEST CYCLE TIME	70/21	**6.0**		4.9		4.4	
	80/27	5.2		3.6		3.6	
	90/32	4.9		**2.4**		2.2	
min.	100/38	3.8		2.4		2.0	
HEAD PRESSURE	70/21	**239**	16.8	241	16.9	257	18.1
	80/27	240	16.9	244	17.1	268	18.8
	90/32	241	16.9	**246**	17.3	267	18.8
PSIG kg/cm2G	100/38	249	17.5	251	17.6	287	20.2
SUCTION PRESSURE	70/21	**41**	2.9	42	3.0	45	3.2
	80/27	42	2.9	44	3.1	47	3.3
	90/32	42	3.0	**45**	3.2	48	3.4
PSIG kg/cm2G	100/38	43	3.0	46	3.2	51	3.6

TOTAL HEAT OF REJECTION FROM CONDENSER	23,500 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,200 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	111 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

13. KM-1601SRH with URC-21F Auxiliary Codes: R-0, R-1, and some S-1

This data applies to units with an 8 l/min water valve. The 8 l/min water valve is part number 3U0111-02 and has J248-032 stamped on the side of the valve facing the rear of the unit.

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral for 115V)	
AMPERAGE	12.8 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2640(4.3)	2440(3.7)
WATER gal./24HR (gal./100 lbs.)	255(17.3)	503(31.8)
ICE PRODUCTION PER CYCLE	29.4 lbs. (13.3 kg) 1440 pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 24 lb. 14.6 oz. (11300g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 15 lb. 3.4 oz. Cond. Unit 9 lb. 11.2 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1583**	718	1550	703	1435	651
	80/27	1558	707	1507	684	1353	614
	90/32	1550	703	**1472**	668	1332	604
lbs./day kg./day	100/38	1503	682	1439	653	1203	546
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2440**		2499		2564	
	80/27	2485		2576		2633	
	90/32	2499		**2640**		2703	
watts	100/38	2507		2655		2760	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**503**	1.90	430	1.63	396	1.50
	80/27	448	1.69	335	1.27	336	1.27
	90/32	430	1.63	**255**	0.96	240	0.91
gal./day m3/day	100/38	348	1.32	251	0.95	226	0.86
FREEZING CYCLE TIME	70/21	**22**		23		26	
	80/27	23		25		28	
	90/32	23		**26**		29	
min.	100/38	24		27		31	
HARVEST CYCLE TIME	70/21	**6.7**		5.7		5.4	
	80/27	5.9		4.3		4.6	
	90/32	5.7		**3.2**		3.2	
min.	100/38	4.6		3.2		3.2	
HEAD PRESSURE	70/21	**201**	14.1	215	15.1	235	16.5
	80/27	211	14.9	233	16.4	254	17.8
	90/32	215	15.1	**248**	17.4	269	18.9
PSIG kg/cm2G	100/38	219	15.4	253	17.8	288	20.2
SUCTION PRESSURE	70/21	**36**	2.5	38	2.7	41	2.9
	80/27	38	2.6	41	2.9	44	3.1
	90/32	38	2.7	**43**	3.0	47	3.3
PSIG kg/cm2G	100/38	39	2.7	44	3.1	50	3.5

TOTAL HEAT OF REJECTION FROM CONDENSER	24,600 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,300 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	441 CU. IN (URC-21F)

14. KM-1601SRH with URC-21F Auxiliary Codes: some S-1 and S-2 and Later

This data applies to units with a 15 l/min or 11 l/min water valve. The 15 l/min water valve is part number 3U0111-01 and has J248-030 stamped on the side of the valve facing the rear of the unit. The 11 l/min water valve is either part number 4A1176-04 or 4A5251-04 and has the part number stamped on the side of the valve facing the front of the unit.

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral for 115V)	
AMPERAGE	12.8 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2700(4.30)	2610(4.00)
WATER gal./24HR (gal./100 lbs.)	375(24.9)	785(50.2)
ICE PRODUCTION PER CYCLE	31.2 lbs. (14.2 kg) 1440 pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 24 lb. 14.6 oz. (11300g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 15 lb. 3.4 oz. Cond. Unit 9 lb. 11.2 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1564**	709	1547	702	1468	666
	80/27	1551	703	1524	691	1415	642
	90/32	1547	702	**1505**	683	1407	638
lbs./day kg./day	100/38	1512	686	1482	672	1317	597
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2610**		2636		2684	
	80/27	2630		2671		2725	
	90/32	2636		**2700**		2752	
watts	100/38	2650		2712		2800	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**785**	2.97	665	2.52	583	2.21
	80/27	694	2.63	507	1.92	471	1.78
	90/32	665	2.52	**375**	1.42	318	1.20
gal./day m3/day	100/38	519	1.97	361	1.37	266	1.01
FREEZING CYCLE TIME	70/21	**24**		25		27	
	80/27	25		27		29	
	90/32	25		**28**		30	
min.	100/38	26		29		32	
HARVEST CYCLE TIME	70/21	**5.6**		4.6		4.2	
	80/27	4.8		3.4		3.4	
	90/32	4.6		**2.4**		2.2	
min.	100/38	3.6		2.3		2.0	
HEAD PRESSURE	70/21	**213**	15.0	226	15.9	245	17.2
	80/27	223	15.7	243	17.1	263	18.5
	90/32	226	15.9	**257**	18.1	277	19.5
PSIG kg/cm2G	100/38	230	16.2	262	18.4	296	20.8
SUCTION PRESSURE	70/21	**40**	2.8	41	2.9	44	3.1
	80/27	41	2.9	43	3.1	47	3.3
	90/32	41	2.9	**45**	3.2	48	3.4
PSIG kg/cm2G	100/38	42	3.0	46	3.2	51	3.6

TOTAL HEAT OF REJECTION FROM CONDENSER	22,800 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,300 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	441 CU. IN (URC-21F)

15. KM-1601SRH with URC-22F Auxiliary Codes: S-2 and Later

This data applies to units with an 11 l/min water valve. The 11 l/min water valve is either part number 4A1176-04 or 4A5251-04 and has the part number stamped on the side of the valve facing the front of the unit.

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral for 115V)	
AMPERAGE	12.8 A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2710(4.36)	2560(4.01)
WATER gal./24HR (gal./100 lbs.)	352(23.6)	755(49.3)
ICE PRODUCTION PER CYCLE	31.6 lbs. (14.3 kg) 1440 pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 22 lb. 14.8 oz. (10400g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 15 lb. 3.4 oz. Cond. Unit 7 lb. 11.5 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1531**	694	1519	689	1426	647
	80/27	1522	690	1503	682	1368	620
	90/32	1519	689	**1490**	676	1371	622
lbs./day kg./day	100/38	1475	669	1462	663	1261	572
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2560**		2604		2645	
	80/27	2593		2662		2693	
	90/32	2604		**2710**		2746	
watts	100/38	2606		2719		2780	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**755**	2.86	637	2.41	555	2.10
	80/27	665	2.52	481	1.82	444	1.68
	90/32	637	2.41	**352**	1.33	294	1.11
gal./day m3/day	100/38	493	1.87	338	1.28	241	0.91
FREEZING CYCLE TIME	70/21	**25**		26		28	
	80/27	26		28		30	
	90/32	26		**29**		31	
min.	100/38	27		29		34	
HARVEST CYCLE TIME	70/21	**5.5**		4.6		4.1	
	80/27	4.8		3.5		3.4	
	90/32	4.6		**2.6**		2.3	
min.	100/38	3.6		2.5		2.0	
HEAD PRESSURE	70/21	**207**	14.5	220	15.5	240	16.9
	80/27	217	15.2	237	16.7	258	18.1
	90/32	220	15.5	**252**	17.7	273	19.2
PSIG kg/cm2G	100/38	224	15.8	257	18.1	292	20.5
SUCTION PRESSURE	70/21	**40**	2.8	42	2.9	44	3.1
	80/27	41	2.9	44	3.1	47	3.3
	90/32	42	2.9	**46**	3.2	49	3.4
PSIG kg/cm2G	100/38	42	3.0	46	3.3	51	3.6

TOTAL HEAT OF REJECTION FROM CONDENSER	21,000 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	2,800 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	214 CU. IN (URC-22F)

16. KM-1601SRH3 with URC-21F Auxiliary Codes: R-0, R-1, and some S-1

This data applies to units with an 8 l/min water valve. The 8 l/min water valve is part number 3U0111-02 and has J248-032 stamped on the side of the valve facing the rear of the unit.

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	7.9 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2580(4.3)	2450(3.7)
WATER gal./24HR (gal./100 lbs.)	261(17.9)	504(31.6)
ICE PRODUCTION PER CYCLE	29.4 lbs. (13.3 kg) 1440 pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 24 lb. 14.6 oz. (11300g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 15 lb. 3.4 oz. Cond. Unit 9 lb. 11.2 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	208-230/60/3 (3 wire with neutral	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1596**	724	1556	706	1436	651
	80/27	1565	710	1503	682	1347	611
	90/32	1556	706	**1459**	662	1316	597
lbs./day kg./day	100/38	1510	685	1426	647	1184	537
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2450**		2488		2555	
	80/27	2479		2538		2613	
	90/32	2488		**2580**		2653	
watts	100/38	2506		2597		2720	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**504**	1.91	433	1.64	396	1.50
	80/27	450	1.70	339	1.28	336	1.27
	90/32	433	1.64	**261**	0.99	243	0.92
gal./day m3/day	100/38	351	1.33	256	0.97	226	0.86
FREEZING CYCLE TIME	70/21	**22**		23		26	
	80/27	23		25		28	
	90/32	23		**26**		29	
min.	100/38	24		27		32	
HARVEST CYCLE TIME	70/21	**6.6**		5.6		5.3	
	80/27	5.8		4.3		4.5	
	90/32	5.6		**3.2**		3.2	
min.	100/38	4.5		3.2		3.2	
HEAD PRESSURE	70/21	**202**	14.2	215	15.1	237	16.7
	80/27	212	14.9	233	16.3	257	18.1
	90/32	215	15.1	**247**	17.4	271	19.1
PSIG kg/cm2G	100/38	221	15.5	253	17.8	293	20.6
SUCTION PRESSURE	70/21	**37**	2.6	39	2.7	42	3.0
	80/27	38	2.7	41	2.9	45	3.2
	90/32	39	2.7	**43**	3.0	47	3.3
PSIG kg/cm2G	100/38	40	2.8	44	3.1	51	3.6

TOTAL HEAT OF REJECTION FROM CONDENSER	24,300 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,200 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	441 CU. IN (URC-21F)

17. KM-1601SRH3 with URC-21F Auxiliary Codes: some S-1 and S-2 and Later

This data applies to units with a 15 l/min or 11 l/min water valve. The 15 l/min water valve is part number 3U0111-01 and has J248-030 stamped on the side of the valve facing the rear of the unit. The 11 l/min water valve is either part number 4A1176-04 or 4A5251-04 and has the part number stamped on the side of the valve facing the front of the unit.

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	7.9 A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2960(4.70)	2580(3.90)
WATER gal./24HR (gal./100 lbs.)	363(24.0)	781(49.3)
ICE PRODUCTION PER CYCLE	31.2 lbs. (14.2 kg) 1440 pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 24 lb. 14.6 oz. (11300g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 15 lb. 3.4 oz. Cond. Unit 9 lb. 11.2 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1585**	719	1563	709	1464	664
	80/27	1568	711	1535	696	1396	633
	90/32	1563	709	**1511**	685	1387	629
lbs./day kg./day	100/38	1520	689	1482	672	1273	577
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2580**		2691		2712	
	80/27	2665		2838		2785	
	90/32	2691		**2960**		2939	
watts	100/38	2651		2955		2920	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**781**	2.96	659	2.49	585	2.21
	80/27	688	2.60	497	1.88	476	1.80
	90/32	659	2.49	**363**	1.37	318	1.20
gal./day m3/day	100/38	514	1.95	352	1.33	276	1.05
FREEZING CYCLE TIME	70/21	**24**		25		27	
	80/27	25		27		29	
	90/32	25		**28**		30	
min.	100/38	26		29		32	
HARVEST CYCLE TIME	70/21	**5.5**		4.6		4.1	
	80/27	4.8		3.4		3.4	
	90/32	4.6		**2.4**		2.2	
min.	100/38	3.6		2.4		2.0	
HEAD PRESSURE	70/21	**202**	14.2	215	15.1	237	16.7
	80/27	212	14.9	233	16.3	257	18.1
	90/32	215	15.1	**247**	17.4	271	19.1
PSIG kg/cm2G	100/38	221	15.5	253	17.8	293	20.6
SUCTION PRESSURE	70/21	**37**	2.6	39	2.7	42	3.0
	80/27	38	2.7	41	2.9	45	3.2
	90/32	39	2.7	**43**	3.0	47	3.3
PSIG kg/cm2G	100/38	40	2.8	44	3.1	51	3.6

TOTAL HEAT OF REJECTION FROM CONDENSER	22,000 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,200 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	441 CU. IN (URC-21F)

18. KM-1601SRH3 with URC-22F Auxiliary Codes: S-2 and Later

This data applies to units with an 11 l/min water valve. The 11 l/min water valve is either part number 4A1176-04 or 4A5251-04 and has the part number stamped on the side of the valve facing the front of the unit.

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	7.9 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2780(4.46)	2490(3.90)
WATER gal./24HR (gal./100 lbs.)	348(23.2)	704(46.0)
ICE PRODUCTION PER CYCLE	32.1 lbs. (14.6 kg) 1440 pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 22 lb. 14.8 oz. (10400g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 15 lb. 3.4 oz. Cond. Unit 7 lb. 11.5 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1530**	694	1521	690	1414	641
	80/27	1523	691	1508	684	1349	612
	90/32	1521	690	**1498**	679	1359	616
lbs./day kg./day	100/38	1468	666	1465	665	1231	558
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2490**		2575		2599	
	80/27	2555		2687		2659	
	90/32	2575		**2780**		2775	
watts	100/38	2548		2779		2770	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**704**	2.66	599	2.27	531	2.01
	80/27	624	2.36	462	1.75	435	1.65
	90/32	599	2.27	**348**	1.32	301	1.14
gal./day m3/day	100/38	474	1.79	337	1.27	259	0.98
FREEZING CYCLE TIME	70/21	**26**		27		29	
	80/27	26		28		31	
	90/32	27		**29**		32	
min.	100/38	27		30		34	
HARVEST CYCLE TIME	70/21	**5.3**		4.5		4.1	
	80/27	4.7		3.5		3.4	
	90/32	4.5		**2.7**		2.4	
min.	100/38	3.6		2.6		2.2	
HEAD PRESSURE	70/21	**220**	15.4	237	16.7	244	17.2
	80/27	233	16.4	260	18.3	258	18.2
	90/32	237	16.7	**279**	19.6	281	19.8
PSIG kg/cm2G	100/38	233	16.4	279	19.6	283	19.9
SUCTION PRESSURE	70/21	**40**	2.8	42	3.0	45	3.2
	80/27	42	2.9	45	3.2	48	3.4
	90/32	42	3.0	**47.6**	3.3	50	3.5
PSIG kg/cm2G	100/38	43	3.0	48	3.4	53	3.7

TOTAL HEAT OF REJECTION FROM CONDENSER	26,400 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,500 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	214 CU. IN (URC-22F)

19. KM-1900SAH

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral 115V)	
AMPERAGE	14.4 A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	30 A	
MAXIMUM FUSE SIZE	30 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2670(4.1)	2480(3.2)
WATER gal./24HR (gal./100 lbs.)	293(18.8)	579(31.0)
ICE PRODUCTION PER CYCLE	45.3 lbs. (20.5 kg) 2160pcs.	
REFRIGERANT CHARGE	R404A, 4 lb. 10.1 oz. (2100g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1867**	847	1777	806	1638	743
	80/27	1798	816	1659	752	1511	685
	90/32	1777	806	**1560**	708	1413	641
lbs./day kg./day	100/38	1744	791	1526	692	1278	580
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2480**		2536		2573	
	80/27	2522		2609		2625	
	90/32	2536		**2670**		2696	
watts	100/38	2530		2676		2720	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**579**	2.19	495	1.88	444	1.68
	80/27	515	1.95	385	1.46	369	1.40
	90/32	495	1.88	**293**	1.11	261	0.99
gal./day m3/day	100/38	396	1.50	286	1.08	232	0.88
FREEZING CYCLE TIME	70/21	**32**		34		39	
	80/27	34		37		42	
	90/32	34		**40**		44	
min.	100/38	36		41		49	
HARVEST CYCLE TIME	70/21	**4.8**		4.2		4.0	
	80/27	4.4		3.4		3.5	
	90/32	4.2		**2.8**		2.7	
min.	100/38	3.6		2.7		2.7	
HEAD PRESSURE	70/21	**241**	16.9	263	18.5	288	20.3
	80/27	258	18.1	291	20.5	314	22.1
	90/32	263	18.5	**315**	22.1	339	23.9
PSIG kg/cm2G	100/38	266	18.7	321	22.6	362	25.5
SUCTION PRESSURE	70/21	**49**	3.4	50	3.5	52	3.7
	80/27	50	3.5	52	3.6	54	3.8
	90/32	50	3.5	**53**	3.7	55	3.9
PSIG kg/cm2G	100/38	51	3.6	53	3.8	57	4.0

TOTAL HEAT OF REJECTION FROM CONDENSER 23,800 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]

20. KM-1900SAH3

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	8.59 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2610(4.1)	2510(3.2)
WATER gal./24HR (gal./100 lbs.)	260(17.0)	548(29.5)
ICE PRODUCTION PER CYCLE	45.5 lbs. (20.6 kg) 2160pcs.	
REFRIGERANT CHARGE	R404A, 4 lb. 10.1 oz. (2100g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1859**	843	1763	800	1633	741
	80/27	1786	810	1636	742	1507	684
	90/32	1763	800	**1530**	694	1398	634
lbs./day kg./day	100/38	1738	788	1499	680	1277	579
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2510**		2539		2611	
	80/27	2532		2578		2667	
	90/32	2539		**2610**		2693	
watts	100/38	2564		2630		2770	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**548**	2.08	464	1.76	421	1.59
	80/27	484	1.83	353	1.34	350	1.33
	90/32	464	1.76	**260**	0.98	239	0.91
gal./day m3/day	100/38	368	1.39	255	0.97	220	0.83
FREEZING CYCLE TIME	70/21	**32**		34		38	
	80/27	34		37		41	
	90/32	34		**40**		44	
min.	100/38	35		41		48	
HARVEST CYCLE TIME	70/21	**4.5**		4.0		3.8	
	80/27	4.1		3.3		3.4	
	90/32	4.0		**2.7**		2.7	
min.	100/38	3.4		2.7		2.7	
HEAD PRESSURE	70/21	**237**	16.7	260	18.3	284	20.0
	80/27	255	17.9	291	20.5	311	21.8
	90/32	260	18.3	**317**	22.3	339	23.8
PSIG kg/cm2G	100/38	262	18.5	322	22.6	359	25.2
SUCTION PRESSURE	70/21	**50**	3.5	51	3.6	53	3.8
	80/27	51	3.6	53	3.7	55	3.9
	90/32	51	3.6	**54**	3.8	57	4.0
PSIG kg/cm2G	100/38	52	3.6	55	3.8	59	4.1

TOTAL HEAT OF REJECTION FROM CONDENSER 23,700 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]

21. KM-1900SWH

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral 115V)	
AMPERAGE	12.5 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	30 A	
MAXIMUM FUSE SIZE	30 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2390(3.1)	2330(3.0)
POTABLE WATER gal./24HR (gal./100 lbs.)	348(18.8)	628(33.5)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	1832(99)	1022(55)
ICE PRODUCTION PER CYCLE	47 lbs. (21.3 kg) 2160pcs.	
REFRIGERANT CHARGE	R404A, 3 lb. 1.4 oz. (1400g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1876**	851	1868	847	1734	787
	80/27	1870	848	1858	843	1655	751
	90/32	1868	847	**1850**	839	1673	759
lbs./day kg./day	100/38	1800	816	1809	820	1511	685
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2330**		2348		2377	
	80/27	2343		2371		2403	
	90/32	2348		**2390**		2421	
watts	100/38	2355		2397		2450	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**1650**	6.25	1805	6.83	2168	8.21
	80/27	1768	6.69	2009	7.61	2455	9.29
	90/32	1805	6.83	**2179**	8.25	2598	9.83
gal./day m3/day	100/38	2103	7.96	2277	8.62	2983	11.29
FREEZING CYCLE TIME	70/21	**32**		33		35	
	80/27	33		34		37	
	90/32	33		**35**		38	
min.	100/38	34		35		41	
HARVEST CYCLE TIME	70/21	**4.6**		4.1		3.9	
	80/27	4.2		3.4		3.4	
	90/32	4.1		**2.8**		2.7	
min.	100/38	3.5		2.8		2.7	
HEAD PRESSURE	70/21	**238**	16.7	241	17.0	254	17.9
	80/27	240	16.9	245	17.3	263	18.5
	90/32	241	17.0	**249**	17.5	265	18.6
PSIG kg/cm2G	100/38	247	17.3	253	17.8	279	19.6
SUCTION PRESSURE	70/21	**49**	3.4	49	3.5	51	3.6
	80/27	49	3.5	50	3.5	51	3.6
	90/32	49	3.5	**50**	3.5	52	3.6
PSIG kg/cm2G	100/38	50	3.5	50	3.5	53	3.7

TOTAL HEAT OF REJECTION FROM CONDENSER	26,800 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,200 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	113 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

22. KM-1900SWH3

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	8.4 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2490(3.3)	2410(3.2)
POTABLE WATER gal./24HR (gal./100 lbs.)	341(18.8)	584(32.0)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	1796(99)	982(54)
ICE PRODUCTION PER CYCLE	45.4 lbs. (20.6 kg) 2160pcs.	
REFRIGERANT CHARGE	R404A, 3 lb. 1.4 oz. (1400g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1825**	828	1822	826	1693	768
	80/27	1823	827	1818	824	1619	734
	90/32	1822	826	**1814**	823	1642	745
lbs./day kg./day	100/38	1754	796	1774	805	1484	673
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2410**		2433		2461	
	80/27	2428		2464		2489	
	90/32	2433		**2490**		2516	
watts	100/38	2437		2496		2540	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**1566**	5.93	1733	6.56	2144	8.12
	80/27	1693	6.41	1953	7.39	2465	9.33
	90/32	1733	6.56	**2137**	8.09	2615	9.90
gal./day m3/day	100/38	2063	7.81	2249	8.51	3054	11.56
FREEZING CYCLE TIME	70/21	**32**		33		35	
	80/27	32		34		37	
	90/32	33		**34**		38	
min.	100/38	34		35		41	
HARVEST CYCLE TIME	70/21	**4.7**		4.1		3.9	
	80/27	4.2		3.4		3.5	
	90/32	4.1		**2.7**		2.7	
min.	100/38	3.5		2.7		2.7	
HEAD PRESSURE	70/21	**239**	16.8	241	16.9	255	17.9
	80/27	241	16.9	244	17.1	264	18.5
	90/32	241	16.9	**246**	17.3	264	18.5
PSIG kg/cm2G	100/38	248	17.4	250	17.6	280	19.7
SUCTION PRESSURE	70/21	**50**	3.5	50	3.5	51	3.6
	80/27	50	3.5	50	3.5	52	3.6
	90/32	50	3.5	**50**	3.5	52	3.6
PSIG kg/cm2G	100/38	51	3.6	50	3.5	53	3.7

TOTAL HEAT OF REJECTION FROM CONDENSER	27,100 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,200 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	117 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

23. KM-1900SRH with URC-21F

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral 115V)	
AMPERAGE	14.9 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	30 A	
MAXIMUM FUSE SIZE	30 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2630(3.9)	2460(3.1)
WATER gal./24HR (gal./100 lbs.)	323(20.0)	585(30.5)
ICE PRODUCTION PER CYCLE	46.3 lbs. (21 kg) 2160pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 23 lb. 7.7 oz. (10650g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 13 lbs. 12.5 oz. Cond. Unit 9 lbs. 11.2 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1915**	869	1827	829	1676	760
	80/27	1848	838	1712	777	1543	700
	90/32	1827	829	**1616**	733	1451	658
lbs./day kg./day	100/38	1786	810	1577	715	1299	589
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2460**		2510		2569	
	80/27	2498		2575		2629	
	90/32	2510		**2630**		2687	
watts	100/38	2518		2643		2740	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**585**	2.21	508	1.92	464	1.76
	80/27	526	1.99	407	1.54	397	1.50
	90/32	508	1.92	**323**	1.22	298	1.13
gal./day m3/day	100/38	419	1.58	317	1.20	274	1.04
FREEZING CYCLE TIME	70/21	**31**		33		37	
	80/27	33		36		40	
	90/32	33		**38**		43	
min.	100/38	34		39		46	
HARVEST CYCLE TIME	70/21	**4.9**		4.4		4.3	
	80/27	4.5		3.9		4.0	
	90/32	4.4		**3.4**		3.4	
min.	100/38	4.0		3.4		3.4	
HEAD PRESSURE	70/21	**212**	14.9	228	16.0	247	17.3
	80/27	224	15.8	249	17.5	266	18.7
	90/32	228	16.0	**267**	18.8	285	20.0
PSIG kg/cm2G	100/38	231	16.2	271	19.1	301	21.2
SUCTION PRESSURE	70/21	**49**	3.4	50	3.5	52	3.7
	80/27	50	3.5	52	3.6	54	3.8
	90/32	50	3.5	**53**	3.7	55	3.9
PSIG kg/cm2G	100/38	51	3.6	53	3.8	57	4.0

TOTAL HEAT OF REJECTION FROM CONDENSER	27,400 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,300 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	441 CU. IN (URC-21F)

24. KM-1900SRH with URC-22F

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral 115V)	
AMPERAGE	14.9 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	30 A	
MAXIMUM FUSE SIZE	30 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2790(4.09)	2500(3.23)
WATER gal./24HR (gal./100 lbs.)	328(20.0)	609(32.8)
ICE PRODUCTION PER CYCLE	46 lbs. (20.9 kg) 2160pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 21 lb. 7.9 oz. (9750g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 13 lbs. 12.5 oz. Cond. Unit 7 lbs. 11.5 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1857**	842	1793	814	1636	742
	80/27	1809	820	1710	776	1514	687
	90/32	1793	814	**1640**	744	1457	661
lbs./day kg./day	100/38	1738	789	1597	724	1289	585
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2500**		2585		2605	
	80/27	2565		2697		2663	
	90/32	2585		**2790**		2780	
watts	100/38	2556		2788		2770	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**609**	2.30	527	1.99	474	1.79
	80/27	546	2.07	418	1.58	399	1.51
	90/32	527	1.99	**328**	1.24	293	1.11
gal./day m3/day	100/38	428	1.62	320	1.21	262	0.99
FREEZING CYCLE TIME	70/21	**32**		34		38	
	80/27	34		36		41	
	90/32	34		**38**		42	
min.	100/38	35		39		46	
HARVEST CYCLE TIME	70/21	**5.4**		4.9		4.6	
	80/27	5.0		4.1		4.2	
	90/32	4.9		**3.5**		3.4	
min.	100/38	4.2		3.5		3.4	
HEAD PRESSURE	70/21	**207**	14.6	224	15.7	241	17.0
	80/27	220	15.4	246	17.3	260	18.3
	90/32	224	15.7	**264**	18.6	280	19.7
PSIG kg/cm2G	100/38	225	15.8	268	18.8	295	20.7
SUCTION PRESSURE	70/21	**49**	3.4	50	3.5	51	3.6
	80/27	49	3.5	50	3.5	53	3.7
	90/32	50	3.5	**51**	3.6	53	3.7
PSIG kg/cm2G	100/38	50	3.5	51	3.6	55	3.9

TOTAL HEAT OF REJECTION FROM CONDENSER	26,500 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,200 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	214 CU. IN (URC-22F)

25. KM-1900SRH3 with URC-21F

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	11.0 A (5 Min. Freeze AT 104°F / WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2840(4.1)	2680(3.3)
WATER gal./24HR (gal./100 lbs.)	332(20.0)	590(30.0)
ICE PRODUCTION PER CYCLE	46.5 lbs. (21.1 kg) 2160pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 23 lb. 7.7 oz. (10650g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 13 lbs. 12.5 oz. Cond. Unit 9 lbs. 11.2 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1965**	891	1876	851	1708	775
	80/27	1897	860	1758	797	1566	710
	90/32	1876	851	**1660**	753	1474	669
lbs./day kg./day	100/38	1827	829	1617	733	1304	591
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2680**		2727		2789	
	80/27	2716		2789		2849	
	90/32	2727		**2840**		2903	
watts	100/38	2738		2855		2960	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**590**	2.23	515	1.95	469	1.77
	80/27	533	2.02	415	1.57	401	1.52
	90/32	515	1.95	**332**	1.26	304	1.15
gal./day m3/day	100/38	425	1.61	325	1.23	278	1.05
FREEZING CYCLE TIME	70/21	**31**		33		37	
	80/27	33		36		40	
	90/32	33		**38**		42	
min.	100/38	34		39		46	
HARVEST CYCLE TIME	70/21	**4.9**		4.4		4.3	
	80/27	4.5		3.8		4.0	
	90/32	4.4		**3.4**		3.4	
min.	100/38	4.0		3.4		3.4	
HEAD PRESSURE	70/21	**202**	14.2	219	15.4	236	16.6
	80/27	215	15.1	241	16.9	255	17.9
	90/32	219	15.4	**259**	18.2	275	19.3
PSIG kg/cm2G	100/38	220	15.5	263	18.5	289	20.3
SUCTION PRESSURE	70/21	**49**	3.4	50	3.5	51	3.6
	80/27	49	3.5	50	3.5	53	3.7
	90/32	50	3.5	**51**	3.6	53	3.7
PSIG kg/cm2G	100/38	50	3.5	51	3.6	55	3.9

TOTAL HEAT OF REJECTION FROM CONDENSER	26,100 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,200 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	441 CU. IN (URC-21F)

26. KM-1900SRH3 with URC-22F

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	11.0 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2780(4.04)	2640(3.33)
WATER gal./24HR (gal./100 lbs.)	345(20.9)	634(33.3)
ICE PRODUCTION PER CYCLE	46.8 lbs. (21.2 kg) 2160pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 21 lb. 7.9 oz. (9750g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 13 lbs. 12.5 oz. Cond. Unit 7 lbs. 11.5 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1903**	863	1829	830	1678	761
	80/27	1847	838	1731	785	1552	704
	90/32	1829	830	**1650**	748	1480	671
lbs./day kg./day	100/38	1782	808	1610	730	1323	600
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2640**		2681		2656	
	80/27	2671		2735		2664	
	90/32	2681		**2780**		2728	
watts	100/38	2648		2768		2680	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**634**	2.40	549	2.08	496	1.88
	80/27	569	2.15	438	1.66	420	1.59
	90/32	549	2.08	**345**	1.31	311	1.18
gal./day m3/day	100/38	448	1.70	337	1.28	280	1.06
FREEZING CYCLE TIME	70/21	**32**		34		38	
	80/27	33		37		41	
	90/32	34		**39**		43	
min.	100/38	35		40		46	
HARVEST CYCLE TIME	70/21	**5.7**		5.0		4.8	
	80/27	5.2		4.2		4.3	
	90/32	5.0		**3.5**		3.4	
min.	100/38	4.3		3.5		3.4	
HEAD PRESSURE	70/21	**209**	14.7	223	15.7	241	16.9
	80/27	219	15.4	241	16.9	259	18.2
	90/32	223	15.7	**256**	18.0	274	19.3
PSIG kg/cm2G	100/38	226	15.9	260	18.3	291	20.5
SUCTION PRESSURE	70/21	**50**	3.5	50	3.5	51	3.6
	80/27	50	3.5	49	3.5	52	3.6
	90/32	50	3.5	**49**	3.4	51	3.6
PSIG kg/cm2G	100/38	51	3.6	49	3.5	53	3.7

TOTAL HEAT OF REJECTION FROM CONDENSER	25,700 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,100 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	214 CU. IN (URC-22F)

27. KM-2100SWH3

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	10.5 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2860(3.35)	2740(3.14)
POTABLE WATER gal./24HR (gal./100 lbs.)	410(20.0)	673(32.1)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	1948(95)	1121(54)
ICE PRODUCTION PER CYCLE	46.8 lbs. (21.2 kg) 2160pcs.	
REFRIGERANT CHARGE	R404A, 3 lb. 6.7 oz. (1550g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**2096**	951	2083	945	1927	874
	80/27	2086	946	2065	937	1834	832
	90/32	2083	945	**2050**	930	1848	838
lbs./day kg./day	100/38	2005	910	2003	908	1662	754
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2740**		2775		2791	
	80/27	2767		2821		2819	
	90/32	2775		**2860**		2865	
watts	100/38	2767		2861		2870	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**1794**	6.79	1959	7.42	2226	8.43
	80/27	1920	7.27	2176	8.24	2466	9.33
	90/32	1959	7.42	**2358**	8.92	2643	10.00
gal./day m3/day	100/38	2225	8.42	2424	9.18	2905	11.00
FREEZING CYCLE TIME	70/21	**28**		29		31	
	80/27	29		30		33	
	90/32	29		**31**		33	
min.	100/38	30		31		36	
HARVEST CYCLE TIME	70/21	**4.9**		4.4		4.0	
	80/27	4.5		3.7		3.6	
	90/32	4.4		**3.2**		2.9	
min.	100/38	3.8		3.1		2.7	
HEAD PRESSURE	70/21	**244**	17.2	248	17.4	264	18.6
	80/27	247	17.4	254	17.8	275	19.4
	90/32	248	17.4	**258**	18.1	278	19.5
PSIG kg/cm2G	100/38	255	17.9	263	18.5	296	20.8
SUCTION PRESSURE	70/21	**48**	3.4	48	3.4	49	3.5
	80/27	48	3.4	49	3.4	50	3.5
	90/32	48	3.4	**49**	3.4	50	3.5
PSIG kg/cm2G	100/38	49	3.4	49	3.5	51	3.6

TOTAL HEAT OF REJECTION FROM CONDENSER	31,100 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,800 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	109 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

28. KM-2100SRH3 with URC-22F

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	12.5 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	3210(4.26)	2900(3.42)
WATER gal./24HR (gal./100 lbs.)	382(21.1)	687(33.8)
ICE PRODUCTION PER CYCLE	46.8 lbs. (21.2 kg) 2160pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 16 lb. 1.5 oz. (7300g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 8 lbs. 6 oz. Cond. Unit 7 lbs. 11.5 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**2034**	923	1968	893	1800	817
	80/27	1984	900	1882	854	1670	758
	90/32	1968	893	**1810**	821	1613	732
lbs./day kg./day	100/38	1908	866	1764	800	1432	650
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2900**		2991		3048	
	80/27	2969		3110		3130	
	90/32	2991		**3210**		3246	
watts	100/38	2979		3219		3280	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**687**	2.60	598	2.26	538	2.04
	80/27	619	2.34	480	1.82	455	1.72
	90/32	598	2.26	**382**	1.45	340	1.29
gal./day m3/day	100/38	490	1.85	372	1.41	302	1.14
FREEZING CYCLE TIME	70/21	**29**		30		34	
	80/27	30		33		37	
	90/32	30		**35**		38	
min.	100/38	32		36		42	
HARVEST CYCLE TIME	70/21	**5.4**		4.9		4.6	
	80/27	5.0		4.2		4.2	
	90/32	4.9		**3.6**		3.5	
min.	100/38	4.3		3.5		3.4	
HEAD PRESSURE	70/21	**217**	15.3	233	16.3	252	17.7
	80/27	229	16.1	253	17.8	271	19.0
	90/32	233	16.3	**270**	19.0	289	20.3
PSIG kg/cm2G	100/38	236	16.6	274	19.3	306	21.5
SUCTION PRESSURE	70/21	**45**	3.2	46	3.2	48	3.4
	80/27	46	3.2	48	3.4	49	3.5
	90/32	46	3.2	**49**	3.4	51	3.6
PSIG kg/cm2G	100/38	46	3.3	49	3.5	52	3.7

TOTAL HEAT OF REJECTION FROM CONDENSER	30,400 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,800 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	214 CU. IN (URC-22F)

29. KM-2500SWH3

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	14.2 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	30 A	
MAXIMUM FUSE SIZE	30 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	3720(3.78)	3510(3.5)
WATER gal./24HR (gal./100 lbs.)	459(19.4)	744(30.9)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	2389(101)	1430(59)
ICE PRODUCTION PER CYCLE	46.3 lbs. (21 kg) 2160pcs.	
REFRIGERANT CHARGE	R404A, 4 lb. 11.5 oz. (2140g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**2408**	1092	2395	1087	2256	1024
	80/27	2398	1088	2379	1079	2172	985
	90/32	2395	1087	**2365**	1073	2184	991
lbs./day kg./day	100/38	2327	1055	2323	1054	2018	915
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**3510**		3572		3615	
	80/27	3557		3653		3673	
	90/32	3572		**3720**		3751	
watts	100/38	3566		3727		3780	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**2174**	8.23	2372	8.98	2679	10.14
	80/27	2325	8.80	2631	9.96	2959	11.20
	90/32	2372	8.98	**2847**	10.78	3173	12.01
gal./day m3/day	100/38	2685	10.16	2924	11.07	3473	13.15
FREEZING CYCLE TIME	70/21	**24**		24		26	
	80/27	24		25		27	
	90/32	24		**26**		28	
min.	100/38	25		26		30	
HARVEST CYCLE TIME	70/21	**5.0**		4.4		4.1	
	80/27	4.6		3.7		3.6	
	90/32	4.4		**3.1**		2.9	
min.	100/38	3.8		3.1		2.7	
HEAD PRESSURE	70/21	**245**	17.2	250	17.6	272	19.1
	80/27	249	17.5	256	18.0	287	20.2
	90/32	250	17.6	**261**	18.4	289	20.3
PSIG kg/cm2G	100/38	259	18.2	267	18.8	314	22.1
SUCTION PRESSURE	70/21	**39**	2.7	40	2.8	42	3.0
	80/27	39	2.8	40	2.8	44	3.1
	90/32	40	2.8	**41**	2.9	44	3.1
PSIG kg/cm2G	100/38	41	2.9	42	2.9	47	3.3

TOTAL HEAT OF REJECTION FROM CONDENSER	35,500 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	4,900 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	130 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

30. KM-2500SRH3 with URC-23F

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	17.7 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	30 A	
MAXIMUM FUSE SIZE	30 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	4190(4.5)	3780(3.7)
WATER gal./24HR (gal./100 lbs.)	416(18.6)	791(32.6)
ICE PRODUCTION PER CYCLE	46.1 lbs. (20.9 kg) 2160pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 24 lb. 7.5 oz. (11100g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 14 lbs. 12.3 oz. Cond. Unit 9 lbs. 11.2 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**2424**	1100	2369	1074	2196	996
	80/27	2382	1080	2296	1041	2069	939
	90/32	2369	1074	**2235**	1014	2028	920
lbs./day kg./day	100/38	2301	1044	2186	992	1837	833
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**3780**		3900		4048	
	80/27	3872		4058		4197	
	90/32	3900		**4190**		4336	
watts	100/38	3924		4224		4470	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**791**	2.99	681	2.58	614	2.32
	80/27	707	2.68	536	2.03	515	1.95
	90/32	681	2.58	**416**	1.57	373	1.41
gal./day m3/day	100/38	551	2.09	406	1.54	334	1.27
FREEZING CYCLE TIME	70/21	**25**		26		28	
	80/27	26		27		30	
	90/32	26		**27**		30	
min.	100/38	27		28		32	
HARVEST CYCLE TIME	70/21	**5.0**		4.3		4.1	
	80/27	4.5		3.5		3.6	
	90/32	4.3		**2.8**		2.7	
min.	100/38	3.6		2.8		2.7	
HEAD PRESSURE	70/21	**214**	15.0	231	16.2	255	17.9
	80/27	227	15.9	253	17.8	277	19.5
	90/32	231	16.2	**271**	19.1	296	20.8
PSIG kg/cm2G	100/38	236	16.6	277	19.5	319	22.4
SUCTION PRESSURE	70/21	**35**	2.5	36	2.5	38	2.7
	80/27	36	2.5	38	2.7	40	2.8
	90/32	36	2.5	**39**	2.7	41	2.9
PSIG kg/cm2G	100/38	37	2.6	39	2.8	43	3.0

TOTAL HEAT OF REJECTION FROM CONDENSER	40,600 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	5,600 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	441 CU. IN (URC-23F)

31. KMH-2000SWH

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral 115V)	
AMPERAGE	12.1 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	30 A	
MAXIMUM FUSE SIZE	30 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2420(3.3)	2410(3.2)
POTABLE WATER gal./24HR (gal./100 lbs.)	308(17.5)	535(29.4)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	1484(84)	929(51)
ICE PRODUCTION PER CYCLE	45.4 lbs. (20.6 kg) 2160pcs.	
REFRIGERANT CHARGE	R404A, 3 lb. 1.4 oz. (1400g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1821**	826	1803	818	1695	769
	80/27	1807	820	1780	807	1625	737
	90/32	1803	818	**1760**	798	1623	736
lbs./day kg./day	100/38	1753	795	1728	784	1497	679
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2410**		2413		2445	
	80/27	2412		2417		2464	
	90/32	2413		**2420**		2462	
watts	100/38	2429		2430		2500	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**1464**	5.54	1560	5.91	1956	7.40
	80/27	1537	5.82	1686	6.38	2229	8.44
	90/32	1560	5.91	**1792**	6.78	2281	8.63
gal./day m3/day	100/38	1817	6.88	1906	7.22	2731	10.34
FREEZING CYCLE TIME	70/21	**32**		33		35	
	80/27	33		34		37	
	90/32	33		**35**		37	
min.	100/38	34		35		40	
HARVEST CYCLE TIME	70/21	**4.4**		3.9		3.8	
	80/27	4.0		3.2		3.4	
	90/32	3.9		**2.7**		2.7	
min.	100/38	3.4		2.7		2.7	
HEAD PRESSURE	70/21	**248**	17.4	251	17.6	260	18.3
	80/27	250	17.6	254	17.9	267	18.8
	90/32	251	17.6	**257**	18.1	269	18.9
PSIG kg/cm2G	100/38	255	17.9	260	18.3	280	19.7
SUCTION PRESSURE	70/21	**50**	3.5	51	3.6	52	3.7
	80/27	50	3.5	51	3.6	53	3.7
	90/32	51	3.6	**52**	3.7	54	3.8
PSIG kg/cm2G	100/38	51	3.6	52	3.7	55	3.9

TOTAL HEAT OF REJECTION FROM CONDENSER	28,000 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,300 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	103 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

32. KMH-2000SWH3

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	7.7 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2330(3.2)	2280(2.9)
POTABLE WATER gal./24HR (gal./100 lbs.)	296(17.1)	540(29.0)
WATER COOLED CONDENSER gal./24HR (gal./100 lbs.)	1369(79)	1001(54)
ICE PRODUCTION PER CYCLE	48.1 lbs. (21.8 kg) 2160pcs.	
REFRIGERANT CHARGE	R404A, 3 lb. 1.4 oz. (1400g)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1861**	844	1822	827	1685	764
	80/27	1832	831	1771	804	1588	720
	90/32	1822	827	**1729**	784	1562	709
lbs./day kg./day	100/38	1767	801	1690	767	1409	639
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2280**		2295		2303	
	80/27	2291		2314		2316	
	90/32	2295		**2330**		2335	
watts	100/38	2293		2331		2340	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**1541**	5.83	1577	5.97	2074	7.85
	80/27	1569	5.94	1625	6.15	2371	8.97
	90/32	1577	5.97	**1665**	6.30	2316	8.77
gal./day m3/day	100/38	1822	6.90	1818	6.88	2914	11.03
FREEZING CYCLE TIME	70/21	**34**		35		38	
	80/27	35		36		39	
	90/32	35		**37**		40	
min.	100/38	36		38		43	
HARVEST CYCLE TIME	70/21	**4.5**		4.0		3.8	
	80/27	4.1		3.4		3.4	
	90/32	4.0		**2.8**		2.7	
min.	100/38	3.5		2.8		2.7	
HEAD PRESSURE	70/21	**258**	18.1	260	18.3	268	18.8
	80/27	260	18.2	263	18.5	273	19.2
	90/32	260	18.3	**265**	18.6	274	19.3
PSIG kg/cm2G	100/38	263	18.5	267	18.8	283	19.9
SUCTION PRESSURE	70/21	**50**	3.5	50	3.5	51	3.6
	80/27	50	3.5	51	3.6	52	3.6
	90/32	50	3.5	**51**	3.6	52	3.7
PSIG kg/cm2G	100/38	51	3.6	51	3.6	53	3.7

TOTAL HEAT OF REJECTION FROM CONDENSER	26,600 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,200 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
WATER FLOW FOR CONDENSER	111 gal./h [AT 100ºF (38ºC) / WT 90ºF (32ºC)]
PRESSURE DROP OF COOLING WATER LINE	less than 10 PSIG

33. KMH-2000SRH with URC-22F

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/1 (3 wire with neutral 115V)	
AMPERAGE	14.9 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	30 A	
MAXIMUM FUSE SIZE	30 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2680(3.8)	2570(3.2)
WATER gal./24HR (gal./100 lbs.)	307(18.1)	570(29.3)
ICE PRODUCTION PER CYCLE	47.7 lbs. (21.6 kg) 2160pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 16 lb. 1.5 oz. (7300g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 8 lbs. 6 oz. Cond. Unit 7 lbs. 11.5 oz.)	

PERFORMANCE DATA SHEET

APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1944**	882	1871	849	1740	789
	80/27	1888	856	1774	805	1626	738
	90/32	1871	849	**1694**	768	1550	703
lbs./day kg./day	100/38	1834	832	1660	753	1418	643
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2570**		2602		2652	
	80/27	2595		2645		2697	
	90/32	2602		**2680**		2732	
watts	100/38	2614		2692		2780	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**570**	2.16	493	1.86	447	1.69
	80/27	511	1.93	391	1.48	379	1.43
	90/32	493	1.86	**307**	1.16	279	1.06
gal./day m3/day	100/38	402	1.52	300	1.14	254	0.96
FREEZING CYCLE TIME	70/21	**32**		33		37	
	80/27	33		36		39	
	90/32	33		**38**		41	
min.	100/38	34		39		45	
HARVEST CYCLE TIME	70/21	**4.5**		4.0		3.8	
	80/27	4.1		3.3		3.4	
	90/32	4.0		**2.7**		2.7	
min.	100/38	3.4		2.7		2.7	
HEAD PRESSURE	70/21	**210**	14.8	225	15.8	243	17.1
	80/27	221	15.6	244	17.2	261	18.4
	90/32	225	15.8	**260**	18.3	278	19.6
PSIG kg/cm2G	100/38	228	16.0	264	18.6	295	20.7
SUCTION PRESSURE	70/21	**48**	3.4	49	3.4	51	3.6
	80/27	49	3.4	50	3.5	52	3.7
	90/32	49	3.4	**51**	3.6	53	3.7
PSIG kg/cm2G	100/38	49	3.5	51	3.6	55	3.9

TOTAL HEAT OF REJECTION FROM CONDENSER	27,600 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,300 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	214 CU. IN (URC-22F)

34. KMH-2000SRH3 with URC-22F

SPECIFICATION SHEET

AC SUPPLY VOLTAGE	208-230/60/3	
AMPERAGE	9.9 A (5 Min. Freeze AT 104°F/WT 80°F)	
MINIMUM CIRCUIT AMPACITY	20 A	
MAXIMUM FUSE SIZE	20 A	
ELECTRIC & WATER CONSUMPTION	90/70°F	70/50°F
ELECTRIC W (kWH/100 lbs.)	2600(3.7)	2430(3.0)
WATER gal./24HR (gal./100 lbs.)	281(16.8)	507(26.3)
ICE PRODUCTION PER CYCLE	46.9 lbs. (21.3 kg) 2160pcs.	
TOTAL REFRIGERANT CHARGE	R404A, 16 lb. 1.5 oz. (7300g)	
REFRIGERANT CHARGE BY UNIT	(Icemaker 8 lbs. 6 oz. Cond. Unit 7 lbs. 11.5 oz.)	

PERFORMANCE DATA SHEET

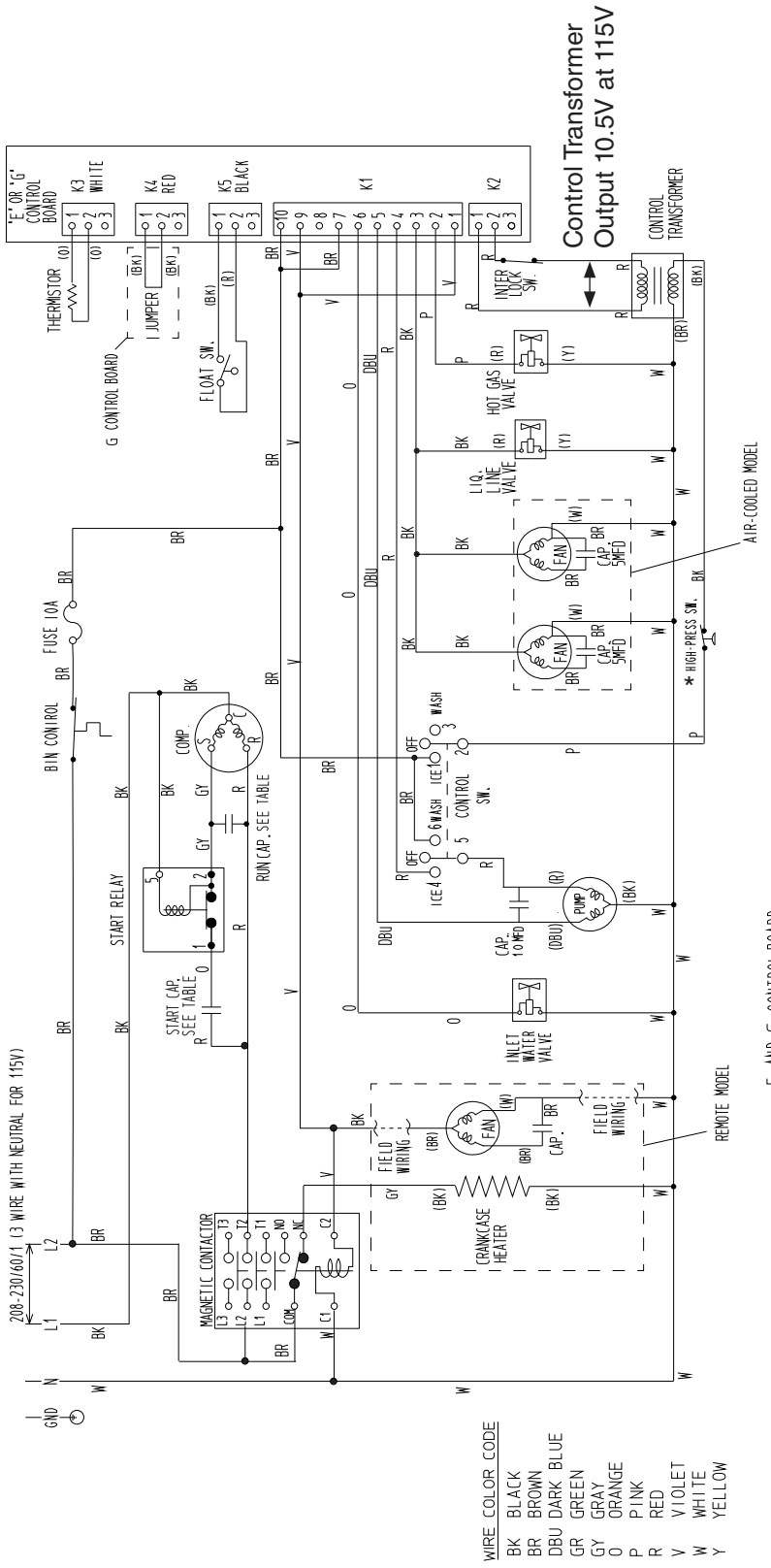
APPROXIMATE ICE PRODUCTION PER 24 HR.	AMBIENT TEMP. (ºF/ºC)	WATER TEMP. (ºF/ºC) 50/10		70/21		90/32	
	70/21	**1929**	875	1855	841	1719	780
	80/27	1872	849	1757	797	1602	727
	90/32	1855	841	**1675**	760	1525	692
lbs./day kg./day	100/38	1816	824	1640	744	1388	630
APPROXIMATE ELECTRIC CONSUMPTION	70/21	**2430**		2480		2535	
	80/27	2468		2545		2593	
	90/32	2480		**2600**		2652	
watts	100/38	2486		2612		2700	
APPROXIMATE WATER CONSUMPTION PER 24 HR.	70/21	**507**	1.92	441	1.67	404	1.53
	80/27	457	1.73	354	1.34	347	1.31
	90/32	441	1.67	**281**	1.07	261	0.99
gal./day m3/day	100/38	364	1.38	277	1.05	242	0.91
FREEZING CYCLE TIME	70/21	**32**		34		37	
	80/27	34		36		40	
	90/32	34		**37**		41	
min.	100/38	35		38		45	
HARVEST CYCLE TIME	70/21	**4.7**		4.6		4.5	
	80/27	4.6		4.4		4.4	
	90/32	4.6		**4.3**		4.3	
min.	100/38	4.4		4.3		4.3	
HEAD PRESSURE	70/21	**210**	14.8	223	15.7	238	16.7
	80/27	220	15.5	241	16.9	254	17.8
	90/32	223	15.7	**255**	17.9	269	18.9
PSIG kg/cm2G	100/38	225	15.8	258	18.2	282	19.8
SUCTION PRESSURE	70/21	**47**	3.3	48	3.3	49	3.4
	80/27	47	3.3	48	3.4	50	3.5
	90/32	48	3.3	**49**	3.4	51	3.6
PSIG kg/cm2G	100/38	48	3.4	49	3.5	52	3.7

TOTAL HEAT OF REJECTION FROM CONDENSER	26,500 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
TOTAL HEAT OF REJECTION FROM COMPRESSOR	3,200 BTU/h [AT 90ºF (32ºC) / WT 70ºF (21ºC)]
CONDENSER VOLUME	214 CU. IN (URC-22F)

B. Wiring Diagrams

1. "E" and "G" Control Board Schematics without Harvest Pump Timer Relays

a) KM-1601SWH, KM-1601SRH, KM-1900S_H, KMH-2000S_H



WIRE COLOR CODE

BK	BLACK
BR	BROWN
DBU	DARK BLUE
GR	GREEN
GY	GRAY
O	ORANGE
P	PINK
R	RED
V	VIOLET
W	WHITE
Y	YELLOW

COMP. RUN / START CAP. TABLE

MODEL	START CAP.	RUN CAP.
KM-1601SWH KM-1601SRH	145-174MFD	35MFD
KM-1900S_H KMH-2000S_H	189-227MFD	

E AND G CONTROL BOARD
S4 DIP SWITCH SETTINGS

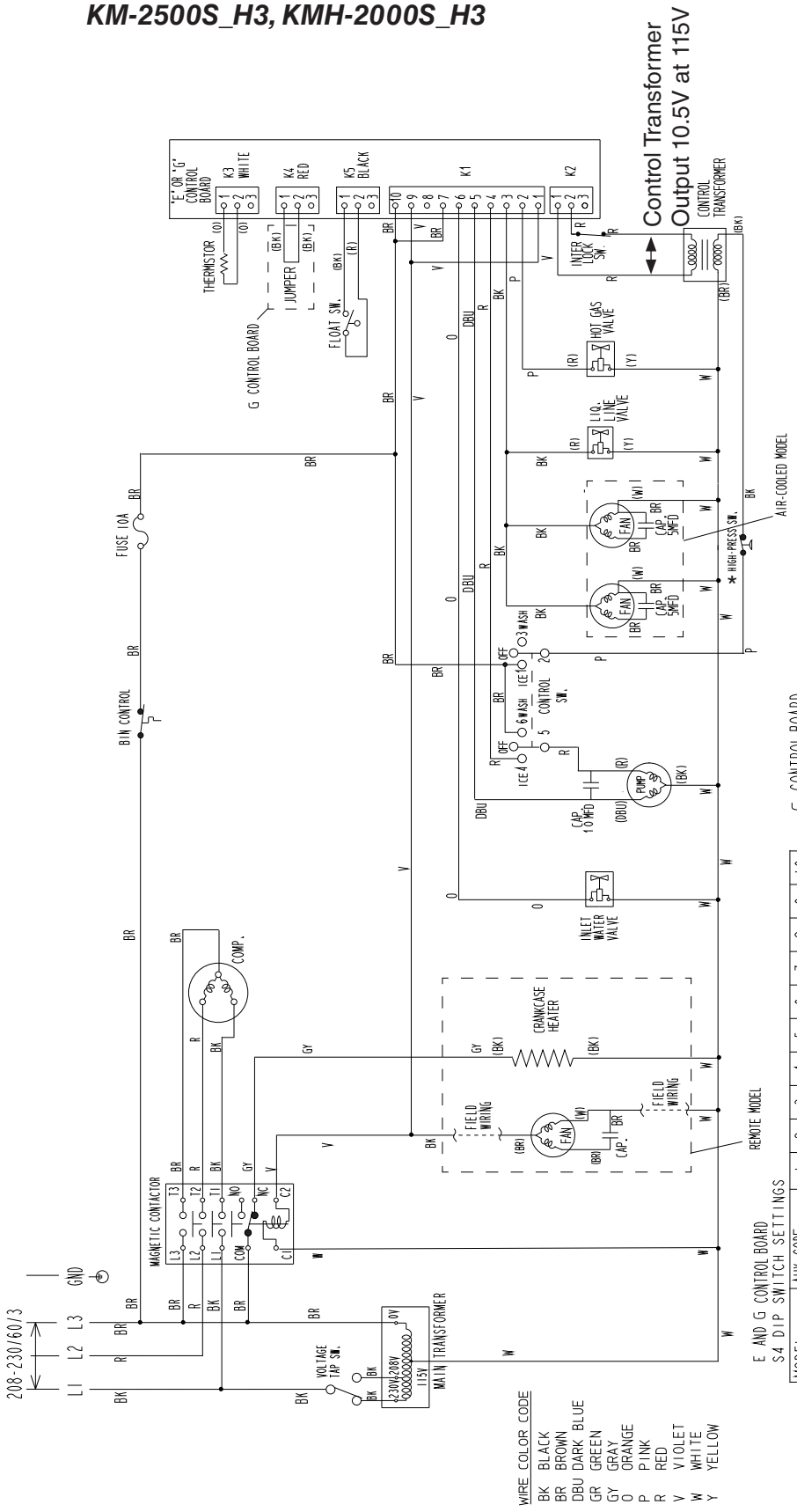
MODEL	AUX. CODE	1	2	3	4	5	6	7	8	9	10
KM-1601SWH	ALL	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
KM-1601SRH	R-0, R-1, SOME S-1	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
KM-1601SRH	S-1 AND LATER	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
KM-1900SAH KM-1900SWH KMH-2000SWH	ALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
KM-1900SRH	ALL	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
KMH-2000SRH	ALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON

G CONTROL BOARD
S5 DIP SWITCH SETTINGS

MODEL	1	2	3	4	5
KM-1601SWH	OFF	OFF	OFF	OFF	OFF
KM-1601SRH					

* High-Pressure Switch		
	Water-Cooled Model	Air and Remote Model
Cut-out	384±$^{22}_{0}$ PSIG	412±$^{22}_{0}$ PSIG
Cut-in	284±22 PSIG	327±22 PSIG

b) KM-1601SWH3, KM-1601SRH3, KM-1900S_H3, KM-2100S_H3, KM-2500S_H3, KMH-2000S_H3



WIRE COLOR CODE

BK	BLACK
BR	BROWN
DBU	DARK BLUE
GR	GREEN
GY	GRAY
O	ORANGE
P	PINK
R	RED
V	VIOLET
W	WHITE
Y	YELLOW

E AND G CONTROL BOARD
S4 DIP SWITCH SETTINGS

MODEL	AUX. CODE	1	2	3	4	5	6	7	8	9	10
KM-1601SWH3	ALL	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
KM-1601SRH3	R-Q,R-J, SOME S-I	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
KM-1601SRH3	S-I AND LATER	ON	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
KM-1900SAH3	ALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
KM-1900SWH3											
KM-2100SWH3											
KMH-2000SWH3											
KMH-2000SRH3											
KM-1900SRH3	ALL	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
KM-2100SRH3											
KM-2500S_H3	ALL	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON

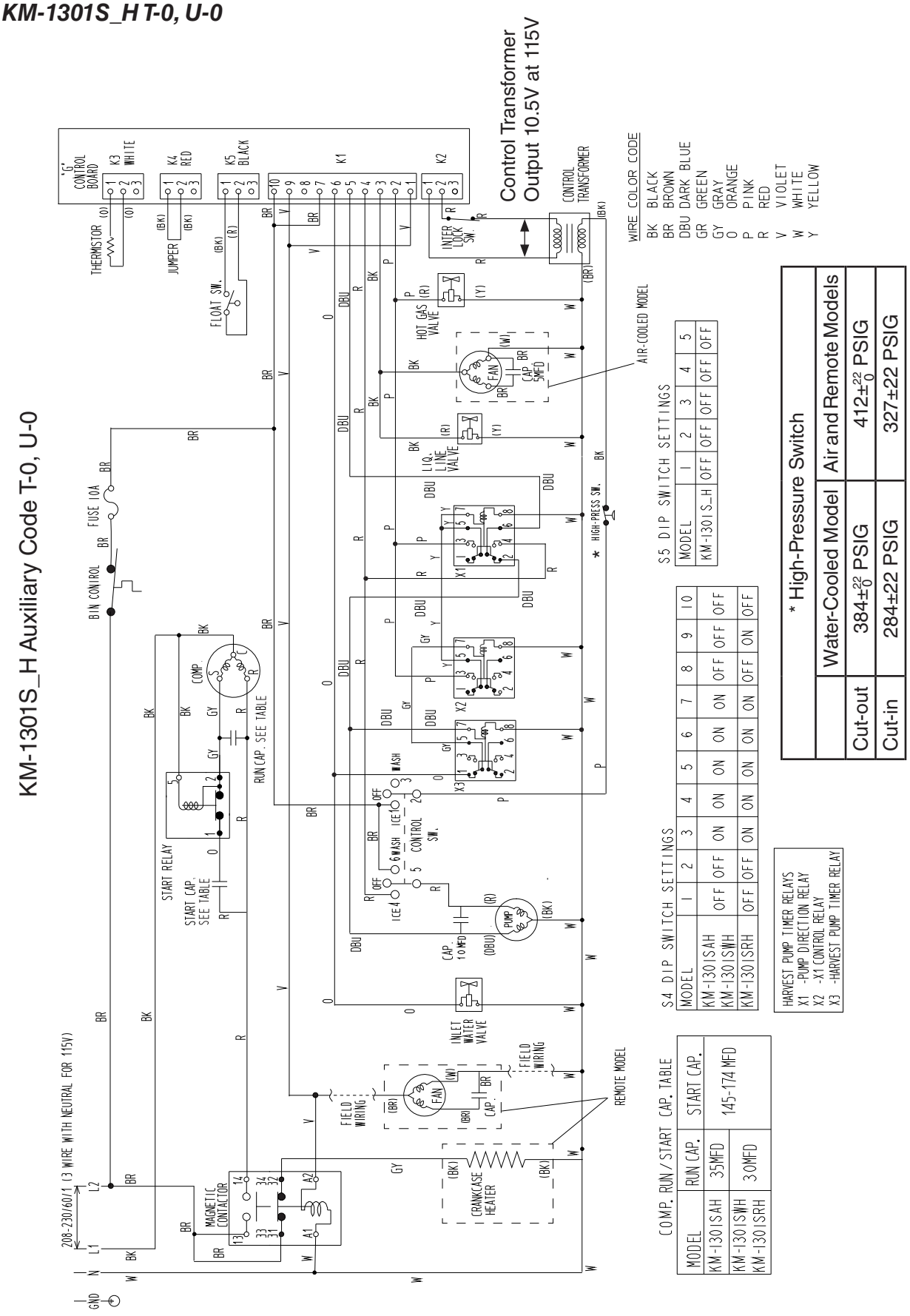
G CONTROL BOARD
S5 DIP SWITCH SETTINGS

MODEL	1	2	3	4	5
KM-1601SWH3	OFF	OFF	OFF	OFF	OFF
KM-1601SRH3					
KM-1900S_H3					
KM-2100S_H3					
KM-2500S_H3					
KMH-2000SWH3					
KMH-2000SRH3					

* High-Pressure Switch		
	Water-Cooled Model	Remote Model
Cut-out	$384\pm^{22}_{0}$ PSIG	$412\pm^{22}_{0}$ PSIG
Cut-in	284±22 PSIG	327±22 PSIG

2. "G" Control Board Schematics with Harvest Pump Timer Relays

a) KM-1301S_H T-0, U-0



COMP. RUN/START CAP. TABLE		
MODEL	RUN CAP.	START CAP.
KM-1301SAH	35MFD	145-174 MFD
KM-1301SWH	30MFD	
KM-1301SRH		

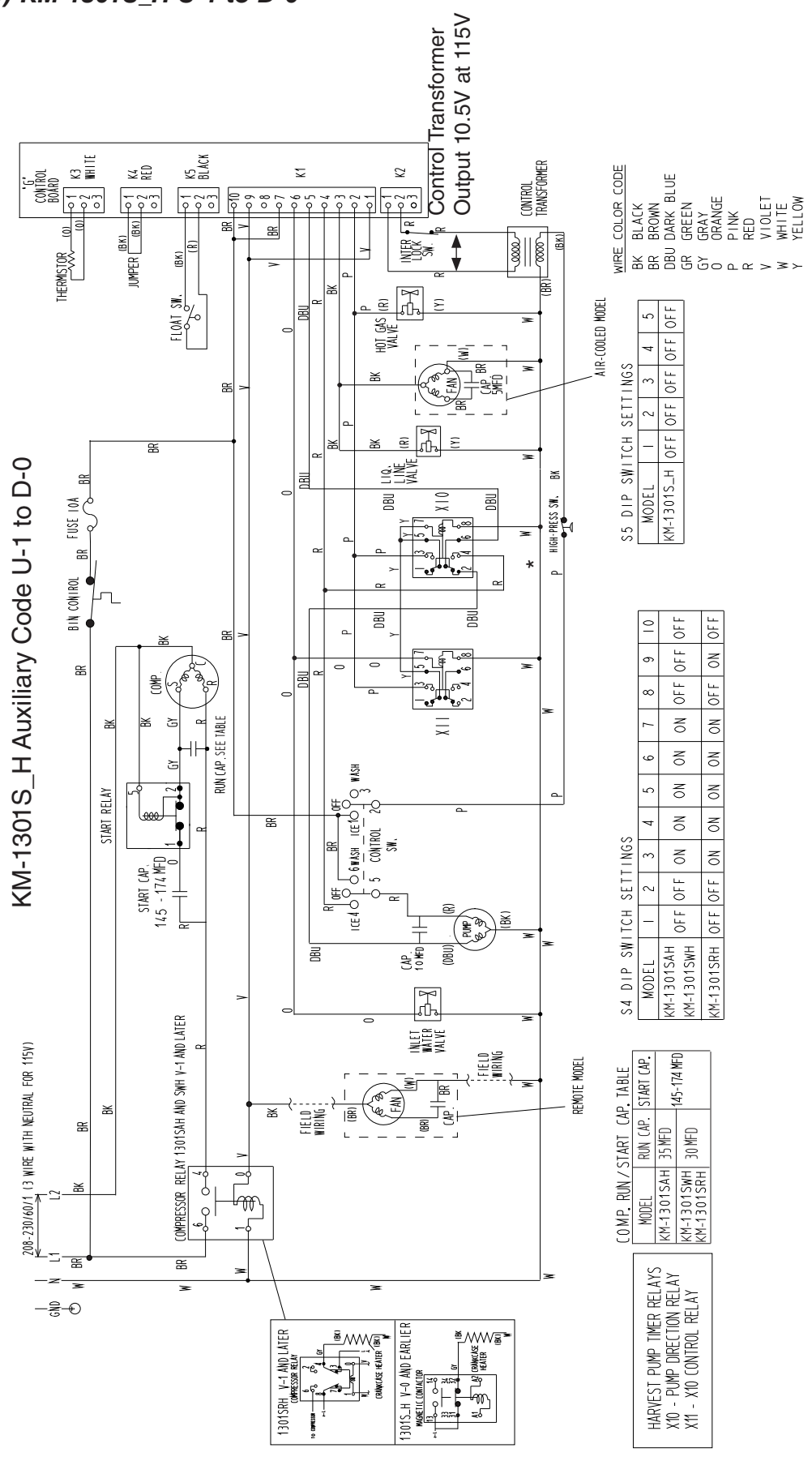
S4 DIP SWITCH SETTINGS										
MODEL	1	2	3	4	5	6	7	8	9	10
KM-1301SAH	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
KM-1301SWH										
KM-1301SRH	OFF	OFF	ON	ON	ON	ON	ON	OFF	ON	OFF

S5 DIP SWITCH SETTINGS						
MODEL	1	2	3	4	5	
KM-1301S_H	OFF	OFF	OFF	OFF	OFF	

HARVEST PUMP TIMER RELAYS
X1 -PUMP DIRECTION RELAY
X2 -X1 CONTROL RELAY
X3 -HARVEST PUMP TIMER RELAY

* High-Pressure Switch		
	Water-Cooled Model	Air and Remote Models
Cut-out	$384\pm^{22}_{0}$ PSIG	$412\pm^{22}_{0}$ PSIG
Cut-in	284±22 PSIG	327±22 PSIG

b) KM-1301S_H U-1 to D-0



COMP. RUN / START CAP. TABLE

MODEL	RUN CAP.	START CAP.
KM-1301SAH	35 MFD	145-174 MFD
KM-1301SWH KM-1301SRH	30 MFD	

S4 DIP SWITCH SETTINGS

MODEL	1	2	3	4	5	6	7	8	9	10
KM-1301SAH	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
KM-1301SWH										
KM-1301SRH	OFF	OFF	ON	ON	ON	ON	ON	OFF	ON	OFF

S5 DIP SWITCH SETTINGS

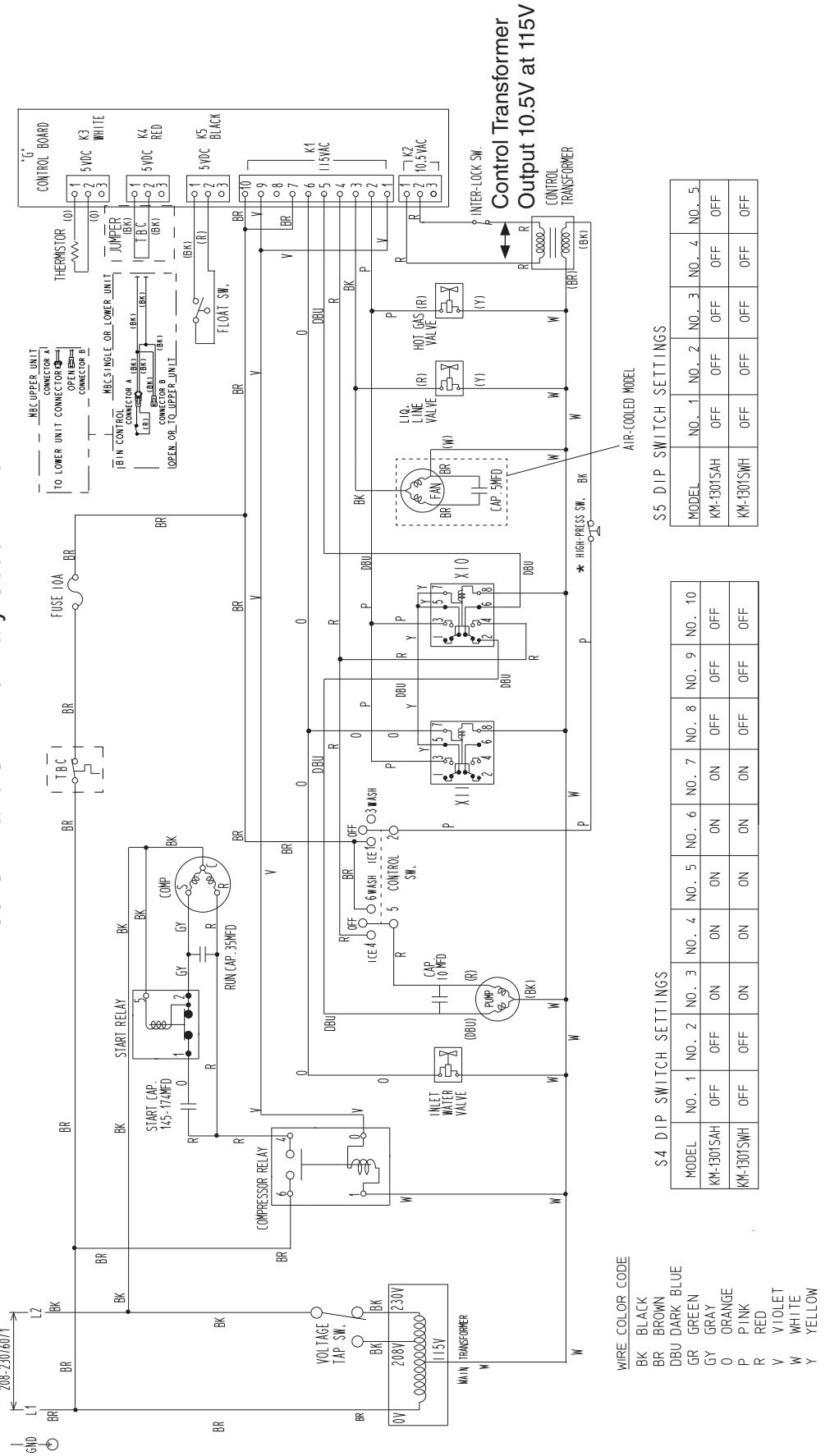
MODEL	1	2	3	4	5
KM-1301S_H	OFF	OFF	OFF	OFF	OFF

WIRE COLOR CODE

BK	BLACK
BR	BROWN
DBU	DARK BLUE
GR	GREEN
GY	GRAY
O	ORANGE
P	PINK
R	RED
V	VIOLET
W	WHITE
Y	YELLOW

* High-Pressure Switch		
	Water-Cooled Model	Air and Remote Models
Cut-out	384±$^{22}_{0}$ PSIG	412±$^{22}_{0}$ PSIG
Cut-in	284±22 PSIG	327±22 PSIG

c) KM-1301SAH and KM-1301SWH D-1 to E-1



S4 DIP SWITCH SETTINGS

MODEL	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10
KM-1301SAH	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
KM-1301SWH	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF

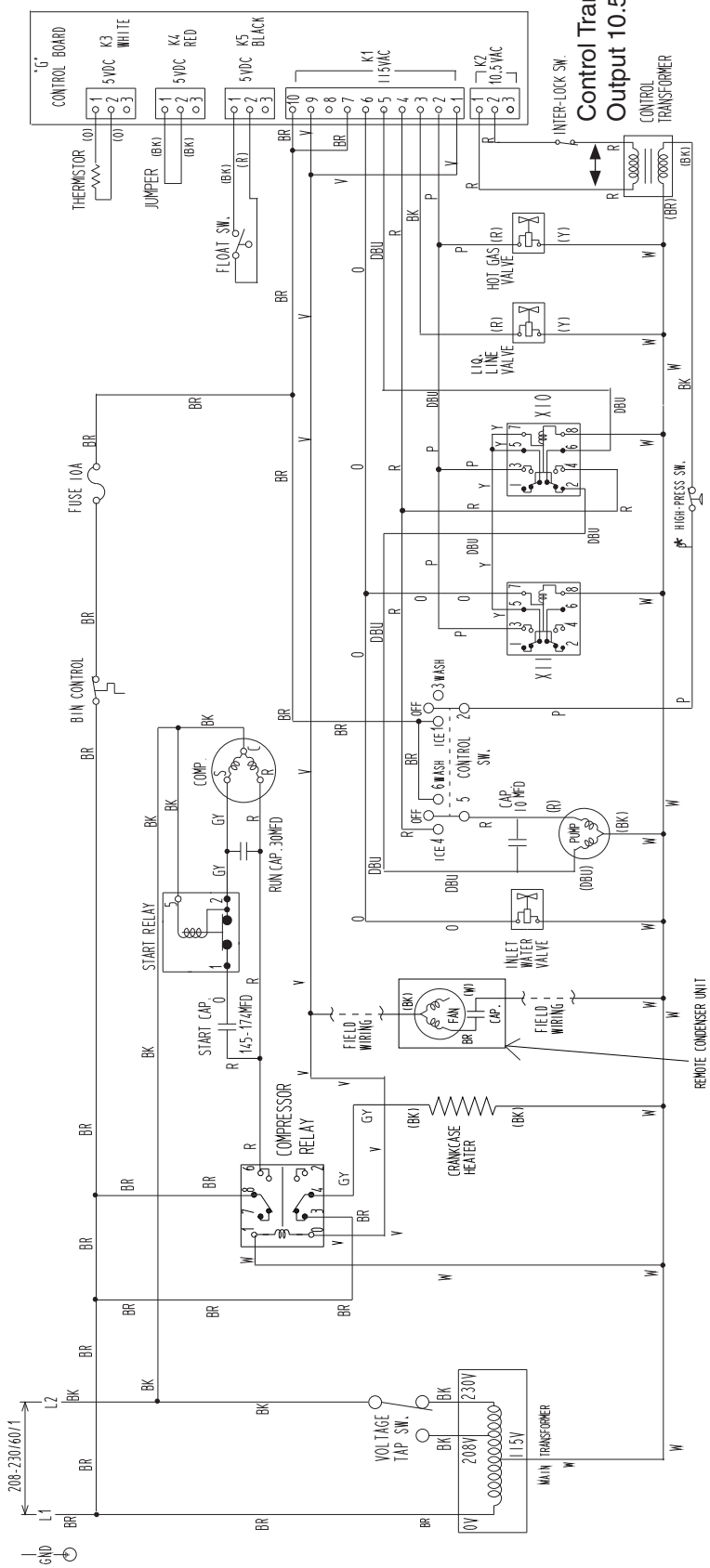
S5 DIP SWITCH SETTINGS

MODEL	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5
KM-1301SAH	OFF	OFF	OFF	OFF	OFF
KM-1301SWH	OFF	OFF	OFF	OFF	OFF

* High-Pressure Switch		
	Water-Cooled Model	Air and Remote Models
Cut-out	384±$^{22}_{0}$ PSIG	412±$^{22}_{0}$ PSIG
Cut-in	284±22 PSIG	327±22 PSIG

d) KM-1301SRH D-1 to E-0

KM-1301SRH Auxiliary Code D-1 to E-0



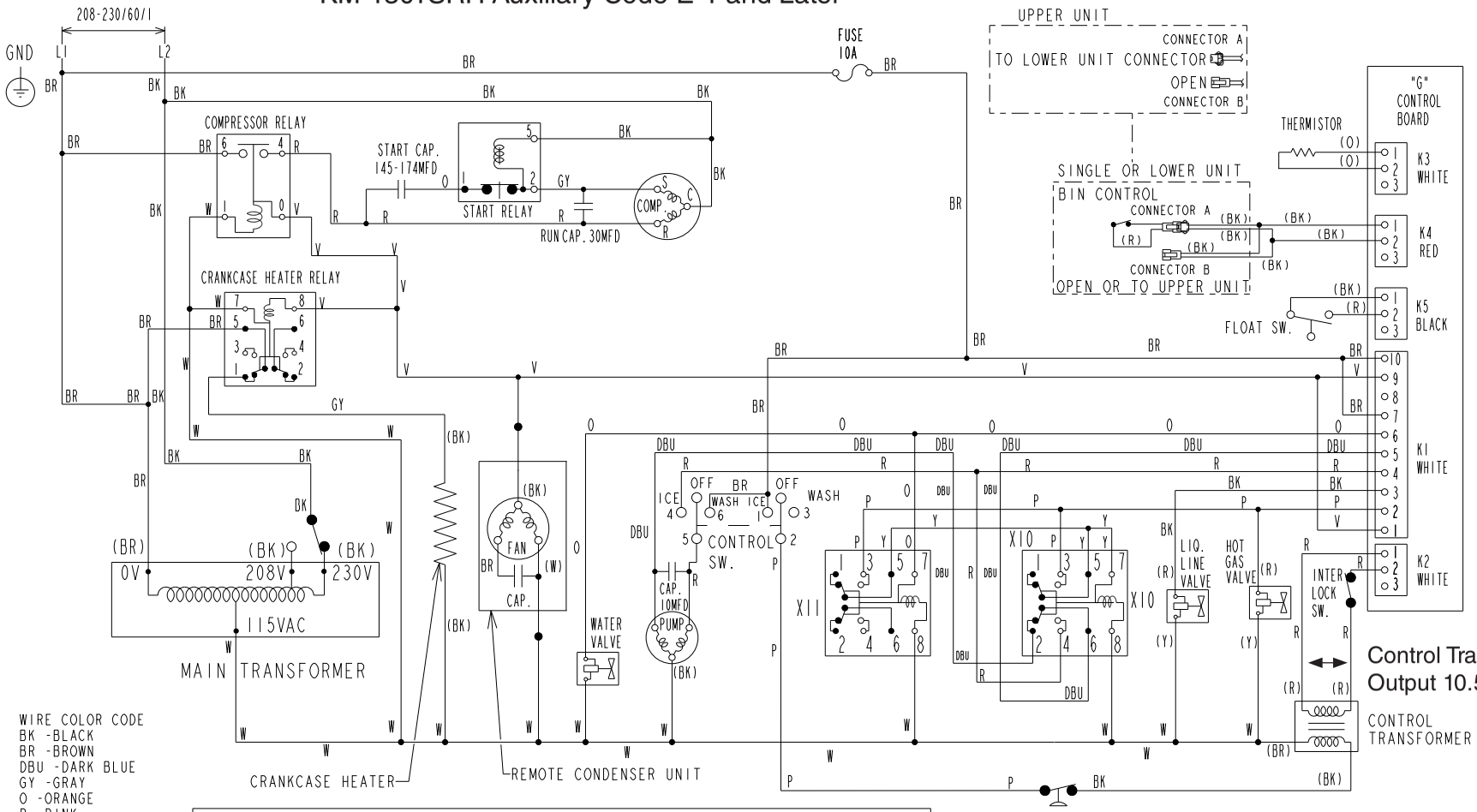
S4 DIP SWITCH SETTINGS										
MODEL	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10
KM-1301SRH	OFF	OFF	ON	ON	ON	ON	ON	OFF	ON	OFF

S5 DIP SWITCH SETTINGS						
MODEL	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5
KM-1301SRH	OFF	OFF	OFF	OFF	OFF

WIRE COLOR CODE	
BK	BLACK
BR	BROWN
DBU	DARK BLUE
GR	GREEN
GY	GRAY
O	ORANGE
P	PINK
R	RED
V	VIOLET
W	WHITE
Y	YELLOW

* High-Pressure Switch	
	Remote Model
Cut-out	412±$^{22}_{0}$ PSIG
Cut-in	327±22 PSIG

KM-1301SRH Auxiliary Code E-1 and Later



Control Transformer
Output 10.5V at 115V

WIRE COLOR CODE
BK -BLACK
BR -BROWN
DBU -DARK BLUE
GY -GRAY
O -ORANGE
P -PINK
R -RED
V -VIOLET
W -WHITE
Y -YELLOW
W/BK -WHITE/BLACK
W/BR -WHITE/BROWN
W/BU -WHITE/BLUE
W/O -WHITE/ORANGE
W/R -WHITE/RED

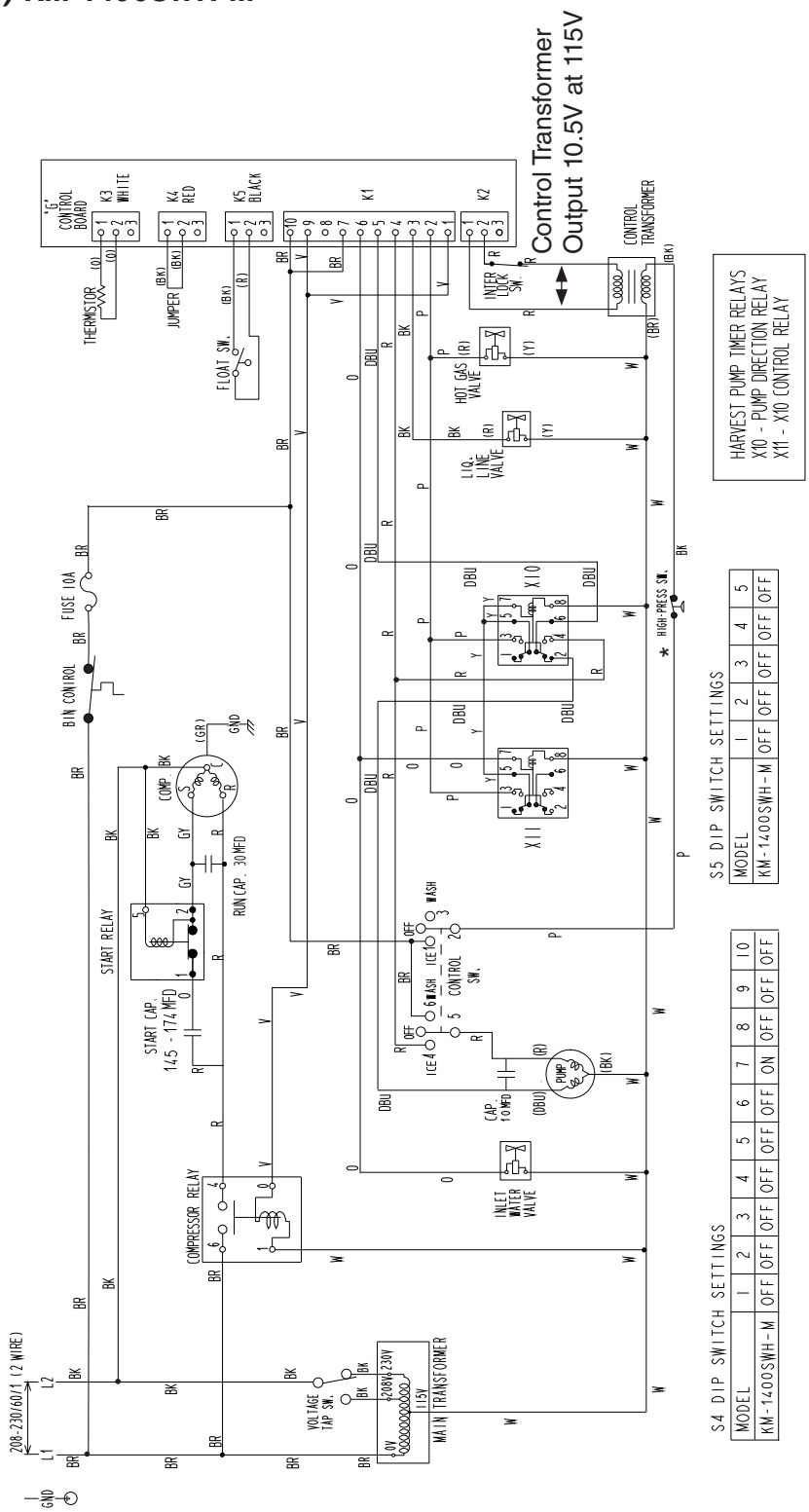
S4 DIP SWITCH SETTING										
MODEL	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10
KM-1301SRH	OFF	OFF	ON	ON	ON	ON	ON	OFF	ON	OFF

HARVEST PUMP TIMER RELAYS
X10 -PUMP DIRECTION RELAY
X11 -X10 CONTROL RELAY

S5 DIP SWITCH SETTING					
MODEL	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5
KM-1301SRH	OFF	OFF	OFF	OFF	OFF

* High-Pressure Switch	
	Remote Model
Cut-out	$412\pm^{22}_{0}$ PSIG
Cut-in	327±22 PSIG

f) KM-1400SWH-M



S4 DIP SWITCH SETTINGS

MODEL	1	2	3	4	5	6	7	8	9	10
KM-1400SWH-M	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF

S5 DIP SWITCH SETTINGS

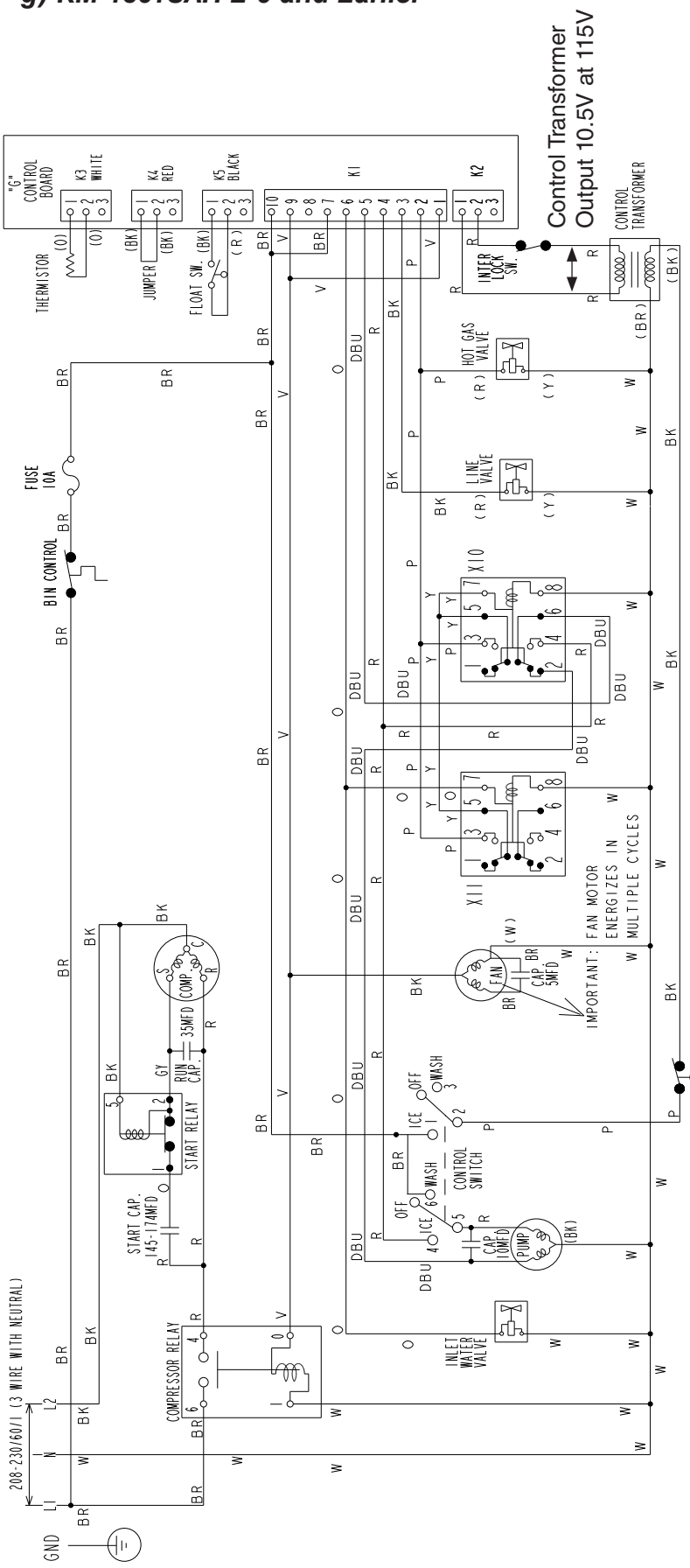
MODEL	1	2	3	4	5
KM-1400SWH-M	OFF	OFF	OFF	OFF	OFF

WIRE COLOR CODE

BK	BLACK
BR	BROWN
DBU	DARK BLUE
GR	GREEN
GY	GRAY
O	ORANGE
P	PINK
R	RED
V	VIOLET
W	WHITE
Y	YELLOW

* High-Pressure Switch	
	Water-Cooled Model
Cut-out	384±$^{22}_{0}$ PSIG
Cut-in	284±22 PSIG

g) KM-1601SAH E-0 and Earlier

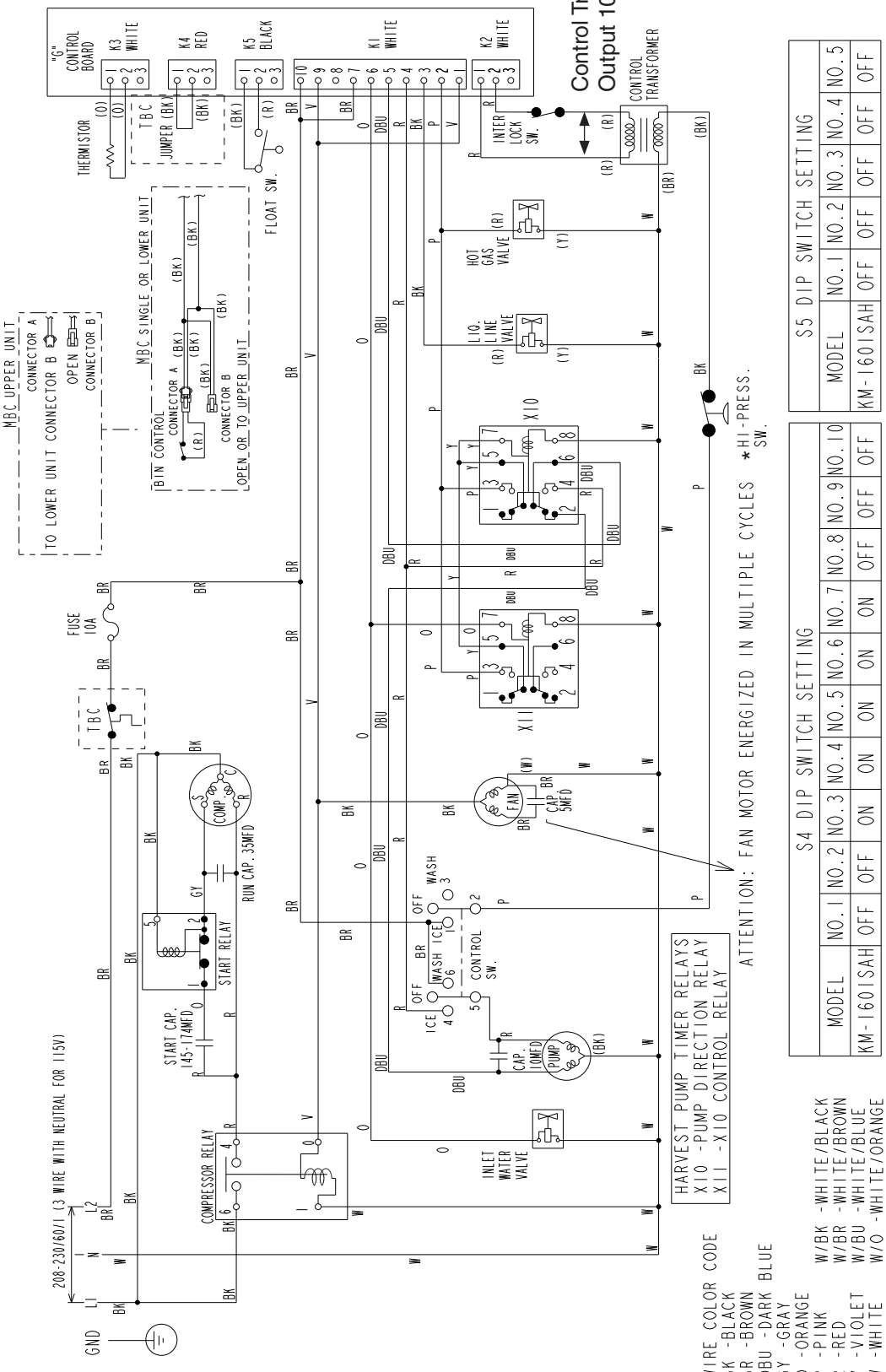


MODEL	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
KM-1601SAH	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF

MODEL	No.1	No.2	No.3	No.4	No.5
KM-1601SAH	OFF	OFF	OFF	OFF	OFF

* High-Pressure Switch		
	Water-Cooled Model	Air and Remote Models
Cut-out	384±$^{22}_{0}$ PSIG	412±$^{22}_{0}$ PSIG
Cut-in	284±22 PSIG	327±22 PSIG

h) KM-1601SAH E-1 and Later

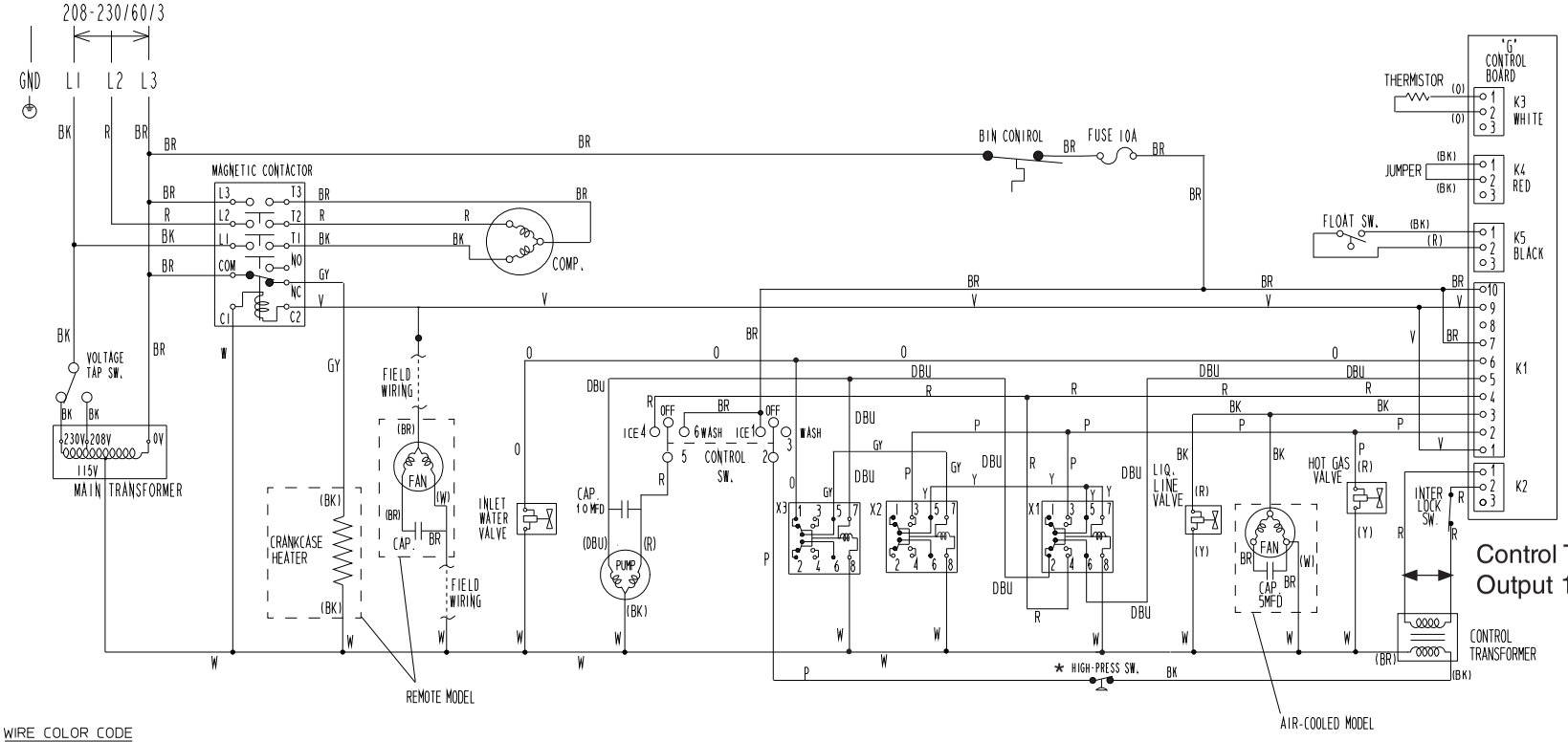


S4 DIP SWITCH SETTING										
MODEL	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10
KM-1601SAH	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF

S5 DIP SWITCH SETTING					
MODEL	NO.1	NO.2	NO.3	NO.4	NO.5
KM-1601SAH	OFF	OFF	OFF	OFF	OFF

* High-Pressure Switch		
	Water-Cooled Model	Air and Remote Models
Cut-out	$384\pm^{22}_{0}$ PSIG	$412\pm^{22}_{0}$ PSIG
Cut-in	284±22 PSIG	327±22 PSIG

Auxiliary Code T-0, U-0 3 Phase



Control Transformer
Output 10.5V at 115V

WIRE COLOR CODE

BK	BLACK
BR	BROWN
DBU	DARK BLUE
GR	GREEN
GY	GRAY
O	ORANGE
P	PINK
R	RED
V	VIOLET
W	WHITE
Y	YELLOW

HARVEST PUMP TIMER RELAYS
X1 -PUMP DIRECTION RELAY
X2 -X1 CONTROL RELAY
X3 -HARVEST PUMP TIMER RELAY

S4 DIP SWITCH SETTINGS

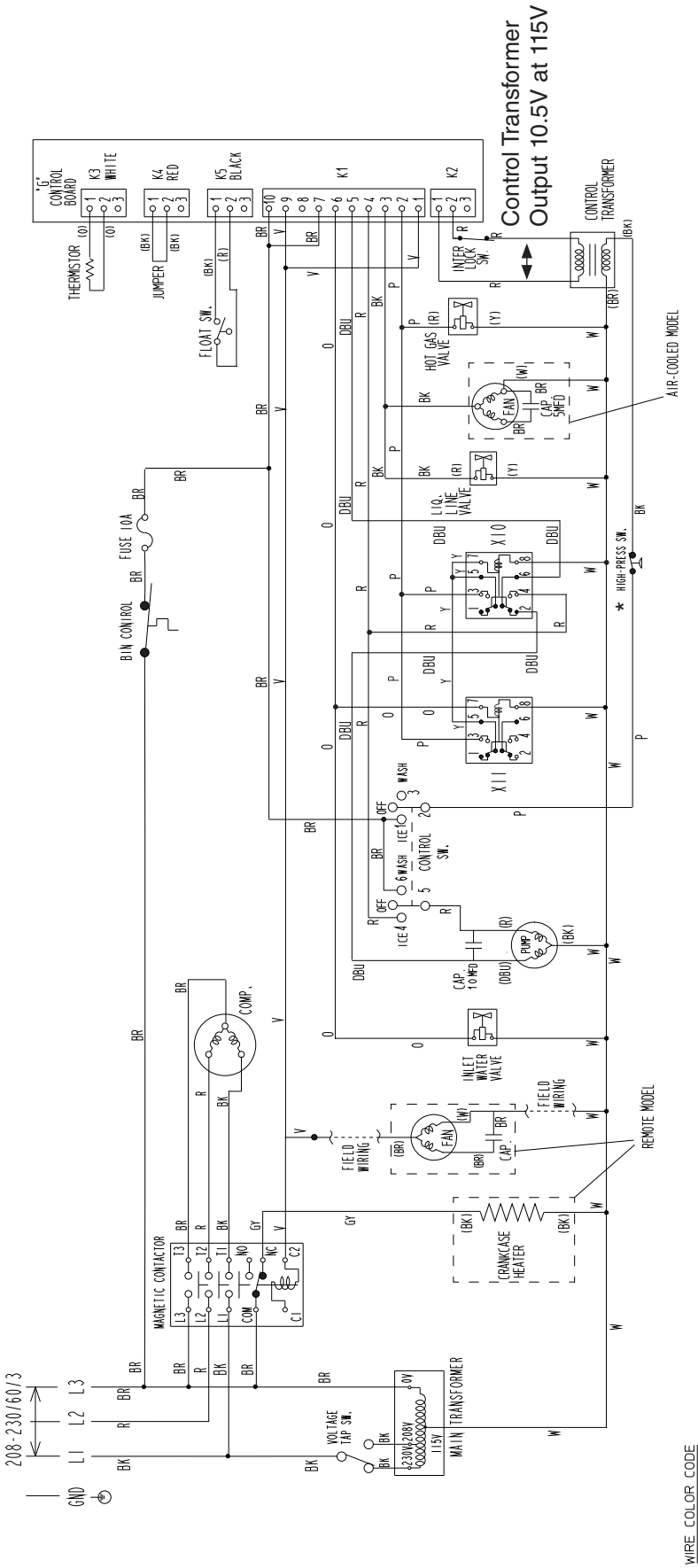
MODEL	1	2	3	4	5	6	7	8	9	10
KM-1301SAH3 KM-1301SWH3	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
KM-1301SRH3	OFF	OFF	ON	ON	ON	ON	ON	OFF	ON	OFF

S5 DIP SWITCH SETTINGS

MODEL	1	2	3	4	5
KM-1301S_H3	OFF	OFF	OFF	OFF	OFF

* High-Pressure Switch		
	Water-Cooled Model	Air and Remote Models
Cut-out	384±$^{22}_{0}$ PSIG	412±$^{22}_{0}$ PSIG
Cut-in	284±22 PSIG	327±22 PSIG

j) KM-1301S_H3 U-1 to E-0 and KM-1601SAH3 A-0 to E-0



S4 DIP SWITCH SETTINGS

MODEL	1	2	3	4	5	6	7	8	9	10
KM-1301SAH3	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
KM-1301SWH3										
KM-1601SAH3										
KM-1301SRH3	OFF	OFF	ON	ON	ON	ON	ON	OFF	ON	OFF

S5 DIP SWITCH SETTINGS

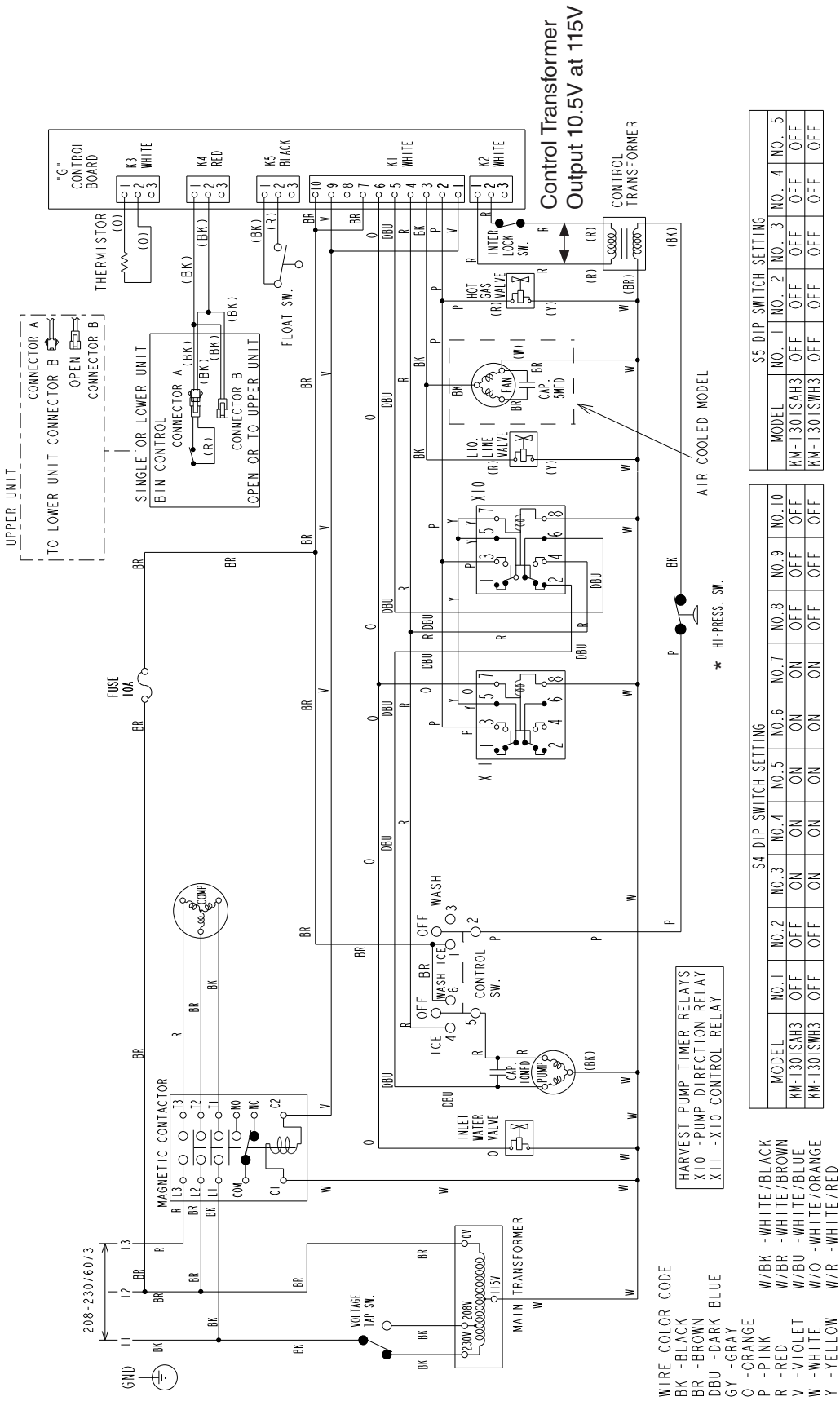
MODEL	1	2	3	4	5
KM-1301S_H3	OFF	OFF	OFF	OFF	OFF
KM-1601SAH3					

WIRE COLOR CODE

BK	BLACK
BR	BROWN
DBU	DARK BLUE
GR	GREEN
GY	GRAY
O	ORANGE
P	PINK
R	RED
V	VIOLET
W	WHITE
Y	YELLOW

* High-Pressure Switch		
	Water-Cooled Model	Air and Remote Models
Cut-out	384±$^{22}_{0}$ PSIG	412±$^{22}_{0}$ PSIG
Cut-in	284±22 PSIG	327±22 PSIG

k) KM-1301S_H3 E-1 and KM-1601SAH3 E-1 and Later



MODEL	NO.1	NO.2	NO.3	NO.4	NO.5	NO.6	NO.7	NO.8	NO.9	NO.10
KM-1301SAH3	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF
KM-1301SWH3	OFF	OFF	ON	ON	ON	ON	ON	OFF	OFF	OFF

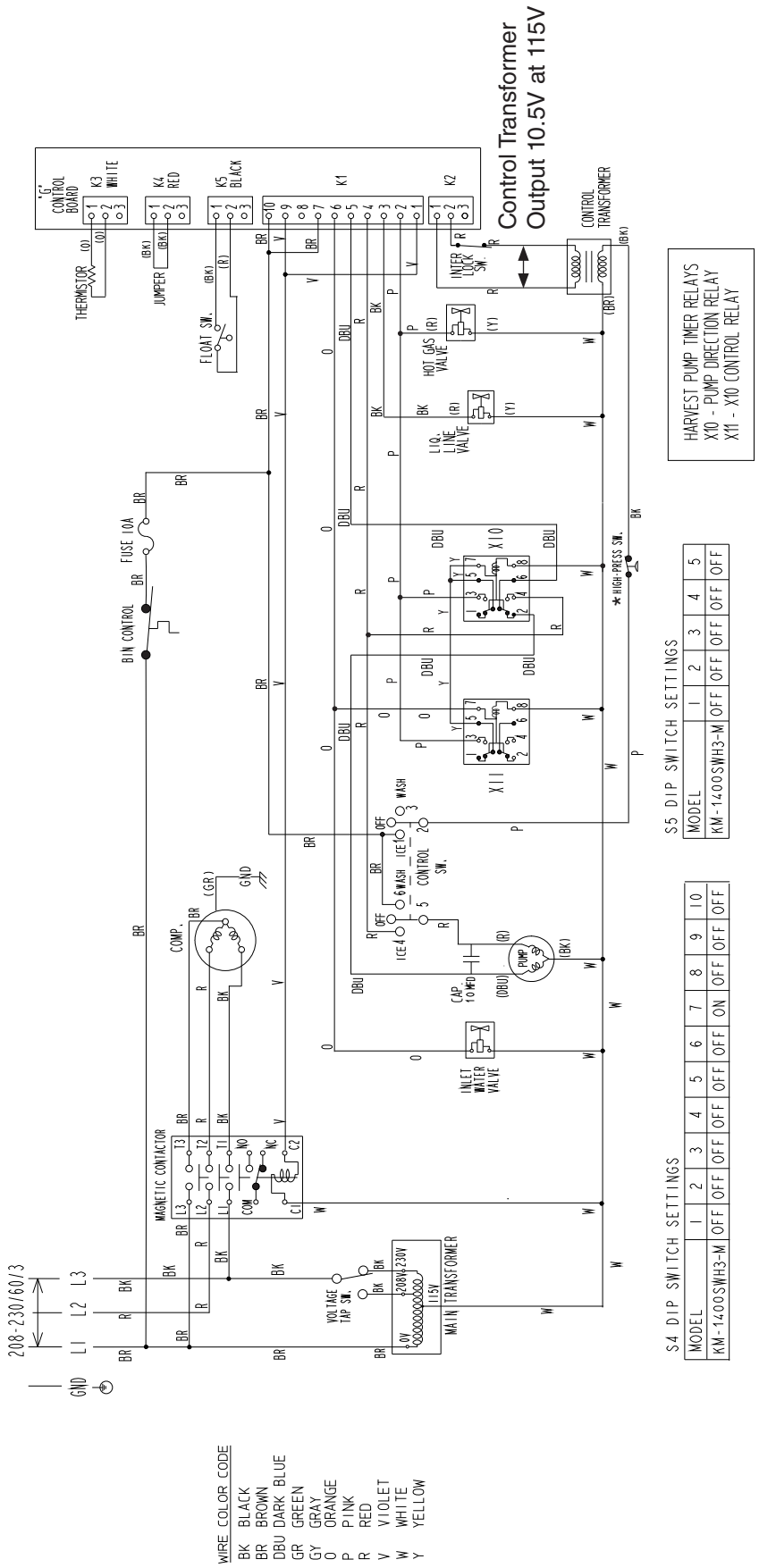
S4 DIP SWITCH SETTING

MODEL	NO. 1	NO. 2	NO. 3	NO. 4	NO. 5
KM-1301SAH3	OFF	OFF	OFF	OFF	OFF
KM-1301SWH3	OFF	OFF	OFF	OFF	OFF

S5 DIP SWITCH SETTING

* High-Pressure Switch		
	Water-Cooled Model	Air and Remote Models
Cut-out	384±$^{22}_{0}$ PSIG	412±$^{22}_{0}$ PSIG
Cut-in	284±22 PSIG	327±22 PSIG

I) KM-1400SWH3-M



* High-Pressure Switch	
	Water-Cooled Model
Cut-out	384±$^{22}_{0}$ PSIG
Cut-in	284±22 PSIG